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PROCEEDINGS
OF THE
ZOOLOGICAL SOCIETY OF LONDON.

January 12, 1847.

No business was transacted.

January 26, 1847.

George Gulliver, Esq., F.R.S., in the Chair.

The following communication was read:—

DESCRIPTIONS OF SIX NEW SPECIES OF AUSTRALIAN BIRDS. BY
JOHN GOULD, F.R.S.

CYSTICOLA LINEOCAPILLA, Gould. *Cys. rufa; plumis capitis et dorsi late conspicue per mediam longitudinaliter nigro-fusco striatis; rectricibus macula alba infra ornatis.*

General plumage pale rufous, with broad and conspicuous striæ of blackish brown, forming lines down the centre of the feathers of the head and back, the under surface fading into white on the throat and centre of the chest; tail-feathers with a conspicuous blackish spot on the under surface near the tip; irides light reddish brown; bill and feet flesh-brown.

Total length, $3\frac{3}{4}$ inches; bill, $\frac{1}{2}$; wing, $1\frac{5}{8}$; tail, $1\frac{7}{8}$; tarsi, $\frac{5}{8}$.

Hab. Port Essington.

Remark.—Nearly allied to *C. exilis*.

MIRAFRA HORSFIELDII, Gould. *Mir. cinerea; mediis plumis, capite, dorso inferiore, alisque, fuscis; alis albo-marginatis; gula serie macularum intense fuscarum semilunari ornatâ.*

General plumage ashy brown, with the centre of the feathers dark brown, the latter colour predominating on the head, lower part of the back and tertiaries; wings brown, margined with rufous; over the eye a stripe of buff; chin white; under surface pale buff; throat

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crossed by a series of dark brown spots, arranged in a crescentic form; under surface of the wing rufous; bill flesh-brown at the base and dark brown at the tip; feet fleshy brown.

Total length, $5\frac{1}{2}$ inches; bill, $\frac{1}{2}$; wing, $2\frac{1}{8}$; tail, $2\frac{1}{8}$; tarsi, $\frac{7}{8}$.

Hab. Interior of New South Wales.

Remark.—Nearly allied to, but smaller than, the *Mirafra Javanica* of Dr. Horsfield.

AMYTIS MACROURUS, Gould. *Amy. corpore superiore fusco; plumis singulis lined angustâ albâ longitudinaliter per mediam ornatis; corpore inferiore nec aliter nisi pallidius picto; scapulis infra rubiginosis; caudâ fuscâ brunneo-marginatâ.*

Upper surface brown, each feather with a narrow stripe of white down the centre; under surface the same, but much paler; under surface of the shoulder pale rusty red; tail brown, margined with pale brown; irides hazel; base of the lower mandible horn-colour, remainder of the bill black; feet flesh-brown.

Total length, 7 inches; bill, $\frac{1}{2}$; wing, $2\frac{5}{8}$; tail, $4\frac{1}{4}$; tarsi, 1.

Hab. Western Australia.

Remark.—This is a more robust species than the two previously known, viz. *A. texilis* and *A. striatus*, from which it may also be distinguished by the much greater length and size of the tail.

SERICORNIS MACULATUS, Gould. *Ser. corpore superiore, alis, caudâque, fuscis; caudâ ad apicem latâ fasciâ nigro-fuscâ transversim ornatâ; rectricibus externis vix albo ad apices notatis; alis spuriiis nigris; internis pennarum pogoniis albo-marginatis; corpore inferiore griseo-albo.*

Upper surface, wings and tail brown, the latter crossed near the tip with a broad band of blackish brown, and the outer feathers slightly tipped with white; forehead and lores deep black; stripe above and a small patch below the eye white; spurious wing-feathers black, margined on their inner webs with white; under surface in some greyish white, in others washed with yellow; the feathers of the throat and chest spotted with black on a light ground; irides greenish white.

Female.—Differs in having the lores brown, and in being somewhat smaller than the male.

Total length, $4\frac{1}{2}$ inches; bill, $\frac{5}{8}$; wing, $2\frac{1}{8}$; tail, 2; tarsi, $\frac{7}{8}$.

Hab. Western and Southern Australia.

SERICORNIS OSCULANS, Gould. *Ser. (Mas) corpore superiore, alis caudâque brunneis; rectricibus, duobus intermediis exceptis, fasciâ nigrâ ad extremitatem ornatis; alis spuriiis nigris albo-marginatis; gulâ et medio abdomine albis, griseo vel flavo tinctis; paucis oblongis maculis in gulâ nigris.*

Male.—Upper surface, wings and tail dark brown, all but the two centre feathers of the latter crossed by a band of black near the extremity; spurious wing-feathers black, margined with white; lores black, above which on each side a patch of white continued in a fine line over the eye; throat and centre of the abdomen greyish white

in some and yellowish white in others, marked with a few oblong black spots on the throat.

Female.—Somewhat smaller in size, and with the lores brown instead of black.

Total length, $4\frac{1}{2}$ inches; bill, $\frac{5}{8}$; wing, $2\frac{1}{4}$; tail, 2; tarsi, $\frac{7}{8}$.

Hab. South Australia.

Remark.—Intermediate in size between *S. frontalis* and *S. humilis*.

SERICORNIS LEVIGASTER, Gould. *Ser. corpore superiore fusco; cauda, ad apicem gradatim nigricante, in apice alba; alis spuris brunneis, pogoniis quarum internis albo-marginatis; corpore inferiore cervino lavato.*

Upper surface brown; tail deepening into black near the extremity and tipped with white; spurious wing-feathers dark brown, margined with white on their inner webs; lores and mark under the eye brownish black; above the eye an indistinct line of white; under surface washed with yellowish buff; irides greenish white.

Female.—Smaller than the male, and with the lores pale brown.

Total length, $4\frac{1}{4}$ inches; bill, $\frac{5}{8}$; wing, $2\frac{1}{8}$; tail, 2; tarsi, $\frac{7}{8}$.

Hab. Interior of Australia, near the Gulf of Carpentaria, where it was discovered by Mr. Gilbert.

Remark.—Nearly allied to *S. frontalis*.

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February 23, 1847.

William Yarrell, Esq., Vice-President, in the Chair.

The following communications were read:—

1. OBSERVATIONS ON STRUTHIONINE BIRDS IN THE MENAGERIE AT KNOWSLEY. BY THE PRESIDENT.

I shall take this opportunity of noticing some of the differences which appear to me to characterize the Struthious tribe in their breeding, and which I rather think are not generally known.

I believe the general supposition to be, that no difference exists, and that they agree at this period with most of the Rasorial birds in being polygamous; but this is by no means the case.

What may be the truth with the head of the Family, the *African Ostrich*, we have had too few opportunities or means of judging. The *Emu* is strictly monogamous; and the male, who attends to the eggs, by no means approves of any other female than the favoured one coming near the nest.

The *Rheas*, on the contrary, are clearly polygamous; and with them the male not only selects the place for and forms the nest, but actually collects together in it the eggs* (which are frequently laid at random about the enclosure), in order that he may incubate them. He shows no signs of anger when the females approach, and in one instance two females have laid in the same nest. By analogy we may perhaps suppose that the *Ostrich* follows a similar plan.

There are differences also in their modes of copulation. If my memory does not deceive me, the *Struthio Camelus* does not, like other birds, mount on the back of the female, but merely places one foot on her back, the necks of the pair twisting about all the while like two snakes, but without holding.

The *Rhea*, on the other hand, seizes hold of the back of the neck; and the *Emu*, I think, is the one which straddles over the female during the operation with his legs on each side of her.

The *Rhea* lays from fourteen to twenty-five eggs; the *Emu* from twelve to seventeen.

2. DESCRIPTION OF A NEW RAT FROM SOUTH AUSTRALIA. BY J. E. GRAY, Esq., F.R.S. &c.

MUS VELLEROSUS. *M. brunneus, albido-varius, ad caput obscurior; vellere prælongo, denso; pilis mollibus ad basin fusco-brunneis, inde*

* The manner in which this operation is accomplished is by inserting the beak between the egg and the ground, and rolling it along by the assistance of his long neck, exactly in the way that a boy would roll a cricket-ball along by the aid of a long stick with a hooked end to it.

pallidioribus, ad apicem albis; codario mollissimo, brunni-plumbeo; caudâ annulatim squamatâ, raris brevibus et rigidioribus setis obsitâ; auribus mediocribus, rotundatis.

Hab. in campis Australiasianis inter fluvios Murray et Glenelg.

The skull resembles the typical Rats. The cutting teeth are yellow, moderate, slightly rounded in front, without any regular groove. The grinders are $\frac{3}{3}$, worn; the anterior upper oblong, formed of three transverse folds, the hinder being smallest; the second tooth is nearly circular, formed of two folds, the front fold largest, and having a notch on its inner side; the third tooth small, half ovate, with two notches on the inner side. The anterior lower grinder is formed of three, and the others of two folds; the anterior fold of the last tooth having a slight notch on the inside, and the posterior fold being smaller than the rest.

	in.	lin.
Length of skull	1	9
——— tooth-line	0	4
Total length	7	6
Tail	4	6

This rat has the dentition and somewhat the general appearance of *Mus fuscipes*, Waterh., but the skull and animal are considerably larger, and the fur is very much longer and paler.

The specimens from which this description is taken were sent to the British Museum by His Excellency Capt. Grey, Governor of New Zealand.

3. ON TWO NEW GENERA OF CETHINÆ. BY G. R. GRAY, ESQ., F.L.S. &c.

I beg to lay before the Meeting the following description of what I believe to be a new genus belonging to the subfamily *Cethinæ*, under the name of *Caulodromus*.

Rostrum capite longius, latum, basi subdepressum, gracile, per totam longitudinem curvatum, lateribus a naribus usque ad apicem obtusum submarginatum fortiter compressis. *Gonys* longus curvatus. *Nares* laterales, antè in sulco brevi lato siti, aperturâ magnâ rotundatâ nudâ. *Alæ* breves, basin caudæ operientes, fortiter rotundatæ, remige sextâ omnium longissimâ. *Cauda* brevissima, rectricum apicibus subacutis. *Tarsi* digito medio breviores, anticè squamis latis transversis muniti. *Digiti* longi, graciles, extimo quam intimo longiore basi coadunato, intimo basi vix coadunato; postico longo, ungue longo curvato armato.

CAULODROMUS GRACEI. *Caul. rufescens, plumarum scapis strigâ rufo-albidâ notatis, pogoniis interioribus in dorso nuchâque nigris; tetricibus caudæ superioribus inferioribusque læte rufis, alis caudâque saturatè brunneis strigis duabus nigris alterâ à rictu alterâque (breviusculâ) à rostri basi ductis, gulâ pectore abdomineque medio rufescenti-albis rufo-brunneo variegatis.*

Rufous brown, streaked narrowly down the shaft of each feather with rufous white; the inner web of the feathers of the back of neck

and back black; the upper and under tail-coverts bright rufous; the wings and tail dark brown; two streaks of black, one from the gape and the other (rather short) from the base of the bill; the throat, breast and middle of the abdomen rufous white, varied with rufous brown.

Total length, 5 inches; bill, from gape, 1 inch; wing, 2 inches 2 lines; tarsi, 1 inch.

This proposed division differs from the typical form of *Certhia* by the length and form of the bill and the position and form of the nostrils, while the extreme shortness of the tail at once points out a great dissimilarity from those species that properly belong to the above-mentioned genus.

I have also before me another bird that appears to belong to the same subfamily, which I shall form into a distinct genus, under the name of

SALPORNIS.

Rostrum longum latum basi subdepressum, per totam longitudinem curvatum; lateribus à naribus fortiter compressis. *Gonys* elongatus, curvatus. *Nares* laterales, anticè in sulco lato brevi siti, aperturâ magnâ nudâ. *Alæ* longissimæ, usque ad caudæ apicem ferè attingentes, acutæ, remige primâ brevissimâ, secundâ ferè longitudinis tertiæ quartæque, quæ æquales et omnium longissimæ. *Cauda* breviuscula, quadrata, rectricum apicibus rotundatis. *Tarsi* medio digito breviores, squamis latis muniti. *Digit*i longi, fortes, intimo quam extimo breviorè basi parùm coadunato, extimo longius coadunato; postico longo, forti, ungue curvato armato.

The type of this proposed genus is already described by Major Franklin in the Proceedings of the Society under the name of *Certhia spilonota* (Proc. 1831, p. 121).

The differences exhibited between this and the former genus are at once seen in the form of the wings, which are lengthened and pointed, and of the tail, which has the ends of the feathers slightly rounded. These characters are like those of *Tichodroma*, while the form of the bill and feet are similar to those of the genus proposed above.

The specimen of *Caulodromus* was kindly lent me by J. R. Grace, Esq., who procured it in Darjeeling: that of *Salpornis* was presented by B. H. Hodgson, Esq. to the British Museum, and forms part of a collection from Behar.

4. DRAFTS FOR AN ARRANGEMENT OF THE TROCHILIDÆ, WITH DESCRIPTIONS OF SOME NEW SPECIES. BY JOHN GOULD, F.R.S.

GENUS PETASOPHORA, G. R. Gray (*Heliothryx*, Boie; *Ramphodon*, Less.; *Colibri*, Spix).

This is one of the best-defined groups of the family, and is distinguished by several peculiarities, the principal of which are the greatly developed ear-coverts and their blue colour, and the similarity in the colouring of the sexes, the females possessing all the brilliancy of

the males and only distinguishable from them by their smaller size and more delicate contour: the young too assume the plumage of the adult.

The oldest known species of this form constitutes the type; it is the

Sp. 1. PETASOPHORA SERRIROSTRIS.

Trochilus serrirostris, Vieill. Nouv. Dict. tom. vii. p. 359; Ency. Méth. part 2. p. 561; Ois. Dor. tom. iii. pl. 1. ined.

Ornismya petasophora, Less. Ois. Mon. pl. 1; Ib. Troc. pls. 12 & 59; Pr. Max. de Wied, sp. 10; Temm. Pl. Col. 203. fig. 3; Jard. Nat. Lib. vol. i. p. 120. pl. 13, male; vol. ii. p. 81. pl. 15, fem.

Petasophora serrirostris, G. R. Gray, List of Gen. of Birds, 2nd edit. p. 17.

Hab. Brazil.

Sp. 2. PETASOPHORA CYANOTUS.

Trochilus cyanotus, Bourc. Rev. Zool. 1843, p. 1; Ann. de Lyons, tom. vi. p. 41, but not the *cyanotus* stated by Lesson to be synonymous with *Delphinae*.

This species appears to be the representative in the Cordilleras of the *P. serrirostris* of the Brazils, from which it is at once distinguished by the blue colouring of the ear-coverts.

Hab. Bogota.

Sp. 3. PETASOPHORA THALASSINA.

Trochilus thalassinus, Swains. Syn. Birds of Mexico, in Phil. Mag. June 1827, p. 441.

Differs from the other members of the genus by being of a smaller size and by the greater extent of the blue on the cheeks and ear-coverts; it has also a slight wash of blue on the chin and centre of the abdomen.

Hab. Mexico.

Sp. 4. PETASOPHORA ANAIS.

Ornismya Anais, Less. Col. Supp. pl. 3; Less. Troc. pls. 55, 56, 57; Rev. Zool. 1838, p. 315, 1839, p. 19; Less. Velin, no. 11; Echo du Monde savante, 1843, no. 31. ined. pl. 11.

Much confusion evidently exists with respect to this species, M. Lesson having figured one bird and described another with the same appellation; under these circumstances it will be to the advantage of science to retain the specific term *Anais* for the bird best known to ornithologists by that designation, the species so common in all collections from Bogota, the *great Anais* of the French, and which is a very fine species, distinguished by the existence of a well-defined band of blue on the throat. The female is fully as bright as the male, but at least one-third smaller in size.

Hab. Venezuela and all the Cordilleras in the neighbourhood of Bogota.

Sp. 5. PETASOPHORA IOLOTA, sp. nov. *Pet. capite, et corpore superiore saturatè viridibus; mento, spatio suboculari, auribus, et medio abdomine intensè, metallicè, cyaneis; corpore inferiore nitente viridi; gula quasi tessellatâ, quia mediæ plumæ quàm pogoniæ extremæ obscurius nitent; tectricibus caudæ inferioribus pallidis ad margines pallidioribus.*

Head and all the upper surface deep green, in some specimens tinged with gold; primaries and secondaries brown, tinged with purple; chin, space beneath the eye, ear-coverts and the centre of the abdomen rich deep metallic blue; all the under surface rich deep glossy green, the throat presenting a tessellated appearance, occasioned by the reflection from the webs throwing a darker hue on the centre of each feather; under tail-coverts pale, with lighter margins; two centre tail-feathers golden green, the remainder steel or bluish shining green, crossed near the extremity by a broad band, which is dull black on the upper surface and shining steel-blue on the under; bill and feet black.

Total length, $5\frac{3}{4}$ inches; bill, $1\frac{3}{8}$; wing, $3\frac{3}{8}$; tail, $2\frac{1}{2}$.

The female is similar to the male in plumage, but smaller in size. Nearly allied to the preceding, but larger and finer in every respect. *Hab.* Bolivia.

Sp. 6. PETASOPHORA CORUSCANS.

Vide Proc. of Zool. Soc. Part 14. pp. 44 & 90.

Sp. 7. PETASOPHORA DELPHINÆ.

O. Delphinæ, Less. Rev. Zool. 1839, p. 44; Echo du Monde savante, 1843, no. 31; Less. Ill. de Zool. tom. ii. 1832, pl. 64.

Sp. 8. PETASOPHORA? GEOFFROYI.

Trochilus Geoffroyi, Bourc. et Muls. Ann. de Lyons, tom. vi. p. 37.

It will probably be necessary at some future period to make this the type of a new genus.

The eight species enumerated above comprise every member of this beautiful genus with which I am acquainted; I possess, however, some immature specimens which may be referable to a ninth species, in which case it will prove to be most nearly allied to *P. serrirostris*. They differ from that bird in having the two outer tail-feathers rather largely tipped with white, the lower part of the abdomen greyish white, and in the ear-coverts being very diminutive. Although I have little doubt of their being distinct, I prefer seeing other specimens before characterizing them.

Genus OREOTROCHILUS, n. g.

Rostrum capite longius, subcylindricum, paulo incurvum. *Ala* subgrandes valentes. *Cauda* magna, rotundata, rectricibus attenuatis, submucronatis, rigidis. *Pedes* fortes. *Digitus* et unguis postici digito et ungui mediis longitudine æquales. *Tarsi* plumis vestiti. *Gula* luminosa infra torquata.

Gen. Char.—Bill longer than the head, almost cylindrical, but slightly curved downwards; wings rather large and powerful; tail large and rounded, the feathers narrow, rather pointed and rigid; feet strong, the hind-toe and nail about equal in length to the middle toe and nail; tarsi clothed with feathers. Throat luminous, bounded below by a distinct collar.

I propose this term as a generic appellation for a section of the *Trochilidae*, which has hitherto only been found immediately beneath the line of perpetual congelation, where they feed upon the insects which resort to the newly expanded flowers. The type is

Sp. 1. OREOTROCHILUS ESTELLA.

Orthorhynchus Estella, D'Orb. Voy. Am. Birds, pl. 6. fig. 1; D'Orb. et La Fres. in Guerin's Mag. de Zool. 1838, p. 31.

O. Ceciliae, Less. Rev. Zool. 1839, p. 43.

Sp. 2. OREOTROCHILUS LEUCOPLEURUS, sp. nov. *Oreot. capite, corpore superiore, alisque, olivaceo-fuscis, griseo tinctis; tectricibus caudæ superioribus sordide æneo-viridibus; rectricibus duabus intermediis viridibus, æneo splendentibus; rectricibus lateralibus sordide albis, apicibus et marginibus exterioribus fuscis; guld luminosè viridi, fasciâ semilunari holosericâ atrâ infrâ ornatâ; medio abdomine lateribusque nigris; mediis sed lateribus et pectore albis.*

Head, all the upper surface and wings greyish olive-brown, passing into dull coppery green on the upper tail-coverts; two centre tail-feathers green, with bronze reflections; lateral tail-feathers dull white, margined externally and tipped, dull brown gradually blending into the white; throat rich luminous grass-green, bounded below by a crescentic band of deep velvety black; breast and centre of the flanks pure white; the remainder of the flanks and centre of the abdomen bluish black; feet dark olive-brown; bill black.

Total length, $4\frac{3}{4}$ inches; bill, 1; wing, $3\frac{1}{4}$; tail, $2\frac{3}{8}$.

This species is nearly allied to the preceding, but differs from it in being somewhat smaller and in having the centre of the abdomen black instead of chestnut.

Hab. The Chilian Cordilleras.

Sp. 3. OREOTROCHILUS CHIMBORAZO.

T. Chimborazo, Bourc. in Rev. Zool. Sept. 1846, p. 305.

Sp. 4. OREOTROCHILUS ADELA.

Orthorhynchus Adela, D'Orb. Voy. Am. Birds, pl. 61. fig. 2; D'Orb. et La Fres. Mag. de Zool. 1839.

Sp. 5. OREOTROCHILUS MELANOGASTER, sp. nov. *Oreot. omni corpore superiore olivaceo-fusco aureo nitente, tectricibus caudæ superioribus viridi lavatis; alis griseo-fuscis purpureo splendentibus; guld fulgente viridi, pectore et abdomine intensè cyaneo-atris.*

All the upper surface olive-brown, with a golden lustre, and washed with green on the upper tail-coverts; wings greyish brown,

with purple reflections; throat rich lustrous grass-green; breast and abdomen rich deep bluish black; flanks rusty brown; tail green, with bronze reflections; bill black; feet olive-black.

Total length, 5 inches; bill, 1; wing, $3\frac{1}{4}$; tail, $2\frac{1}{4}$.

Hab. unknown.

This fine species is in the collection of Mr. John Leadbeater, to whom I am indebted for the loan of it for the purpose of describing.

Mr. Gould then described a fourth new species of Humming Bird, belonging to the genus *Calothorax*, as

TROCHILUS (CALOTHORAX) CALLIOPE. *Cal. corpore superiore viridi; alis caudaque griseo-fuscis; gulæ plumis elongatis, attenuatis, coccineis, basibus albis in formâ stellæ ordinatis; pectore, abdomine medio, tectricibusque caudæ inferioribus, albis; lateribus cervino-albis.*

Upper surface green; wings and tail greyish brown; feathers of the throat elongated, narrow, and of a rich pinky scarlet, with white bases arranged in a starred form; breast, centre of the abdomen and under tail-coverts white; flanks buffy white; bill and feet blackish brown.

Total length, $2\frac{1}{2}$ inches; bill, $\frac{5}{8}$; wing, $1\frac{1}{2}$; tail, 1.

This is a very diminutive species, much smaller than the *C. cyanopogon*, but of precisely the same form.

Hab. Mexico; precise locality unknown.

The Secretary, on the part of Dr. Falconer, exhibited the lower end of the left tibia of a gigantic fossil Struthious Bird from the Sewalik Hills. This interesting remain indicates a very close generic representation of the existing African *Struthio* in the extinct fauna of Asia. Although not altogether unexpected, this is a valuable addition to the facts previously demonstrated in relation to the genera *Camelopardalis*, *Camelus*, *Elephas*, and *Hippopotamus*.

The Secretary also announced to the Meeting that a living specimen of *Otocyon Lalandii*, a drawing of which was exhibited, had been recently presented to the Society by Captain Sir Edward Belcher, C.B., R.N.

March 9, 1847.

William Yarrell, Esq., Vice-President, in the Chair.

The following communications were read :—

1. NOTE ON THE RED CORPUSCLES OF THE BLOOD OF THE MEMINNA DEER (*Moschus Meminna*, Erxl.). BY GEORGE GULLIVER, F.R.S.

After I had made known the curious minuteness of the red corpuscles of the blood of that little ruminant the Napu Musk Deer (see Dublin Medical Press, Nov. 27, 1839, and Proceedings of the Zoological Society, No. CXV.), it was to be expected that these corpuscles would present the same character in the rest of the genus. Accordingly, I some time ago found this to be the case in the Stanley Musk Deer (see Proceedings of the Zoological Society, May 9, 1843, page 66); and it appears, from an examination which I have lately made of the blood-corpuscles of the Meminna Deer, that these are not distinguishable in size from those of the Napu Musk Deer.

The following measurements of the red corpuscles of the blood of the Meminna Deer exactly agree with the measurements of the corresponding corpuscles of the Napu Musk Deer. They are, as usual, given in vulgar fractions of an English inch :—

13400	} Common sizes.
12000	
16000	Small size.
9600	Large size.

12325 Average of all the above sizes.

So minute are these corpuscles, that vast numbers of them measure no more over the flat surface of the disc than the edge or thickness of the red corpuscle of human blood, the average of which appears from my measurements to be $\frac{1}{12400}$ th of an inch.

The size of the blood-corpuscles in the ruminants affords a good illustration of the law, which I have elsewhere deduced from very numerous measurements (see Appendix to the English edition of Gerber's Anatomy, p. 4; Proceedings of the Zoological Society, Oct. 14, 1845, p. 94, and March 24, 1846, p. 26; and the Notes xcvi and cxviii* to my edition of Hewson's works printed for the Sydenham Society), that in the smallest species of a natural order or family of mammals the blood-discs are much more minute than in the largest species of that family; while in the entire class of Birds, the law as to the size of the blood-corpuscles is the same as in a single order of mammals.

Therefore, when that eminent inquirer Hewson states that these corpuscles are not larger in the largest animals, citing in support of his argument the Ox and Mouse, it must be understood as applicable

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only to mammals of different orders. Among the rodents which I have examined, the great species, as the Capybara and the Beaver, have much larger blood-corpuscles than the smallest species, as the Bank Vole and the Harvest Mouse.

2. CHARACTERS OF SIX NEW GENERA OF BATS NOT HITHERTO DISTINGUISHED. BY J. E. GRAY, ESQ., F.R.S. ETC.

The first four genera belong to the tribe of *Phyllostomina*, or Nose-leafed Bats.

1. MIMON.

Ch. gen.—*Membrana interfemoralis* magna, truncata. *Alæ* latæ, margine anteriore lato, a summo talo extenso. *Pedes* elongati. *Crura* nuda. *Cauda* mediocris, inclusa; apice superiore, mediano. *Aures* laterales, magnæ. *Mentum* tuberculo parvo utrinque signatum; tuberculis striâ angustâ divis. *Pollex* longus, attenuatus; articulis æqualibus. *Dentes* incisores $\frac{4}{2}$; duo medii superiores magni; inferiores parvi, stipati.

Ch. gen.—Interfemoral membrane large, truncated. Wings broad, with a broad front margin from the upper part of the ankle. Feet elongated. Legs bald. Tail moderate, enclosed; apex superior, medial. Ears lateral, large. Chin with a small tubercle on each side, separated by a narrow groove. Thumb long, slender; joints equal. Cutting teeth $\frac{4}{2}$; two middle upper large; lower small and crowded.

In the collection at the British Museum there are two species of this genus, viz. 1. *M. Bennettii* = *Phyllostoma Bennettii*, Gray, Mag. Zool. and Bot. vol. ii. p. 6; and 2. *M. megalotis* = *Phyllophora megalotis*, Gray, Ann. and Mag. N. H. 1842, p. 257; Voy. Sulphur, t. v. fig. 2.

2. TRACHOPS.

Ch. gen.—*Membrana interfemoralis* magna, truncata. *Alæ* a summo talo extensæ. *Pedes* osse calcis elongato insignes. *Crura* nuda. *Cauda* mediocris, inclusa; apice superiore, mediano. *Aures* permagnæ, laterales. *Mentum* et *labia* verrucosa, stria lævis angusta in medio mento. *Dentes* incisores $\frac{4}{4}$; medii superiores magni, lati, incisi; inferiores irregulariter ordinati.

Ch. gen.—Interfemoral membrane large, truncated. Wings from the upper part of the ankles. Feet with the heel-bone elongate. Legs bald. Tail moderate, enclosed; apex superior, medial. Ears very large, lateral. Chin and lips covered with warts; chin with a narrow smooth groove in front. Cutting teeth $\frac{4}{4}$; middle upper large, broad, notched; lower in an irregular series.

Type, *T. fuliginosus*.

This species is characterized by its sooty-black colour. My son-in-law, Mr. J. P. G. Smith, collected it at Pernambuco, and sent two females to the Brit. Mus.

Vampyris cirrhosum, Spix, Vesp. Braz. t. xxvi. f. 3, evidently belongs to the same genus, if indeed it is distinct from the species above

noticed. He describes his specimen as chestnut. It is to be observed that his figure is only one-third of the natural size of the animal he described, although it is not noticed on the plate.

3. AMETRIDA.

Ch. gen.—*Membrana interfemoralis* sublata, truncata. *Alæ* a digitorum basi extensæ. *Crura* nuda. *Caput* rotundum, rostrum perbreve, depressum, latum; frons rotundata. *Mentum* triangulari tuberculorum mole scabrum. *Pollex* elongatus, articulo superiore longo, attenuato, inferiore brevi. *Dentes* incisores $\frac{4}{4}$; superiores medii, elongati, conici, acuti; inferiores laterales, parvi, incisi.

Ch. gen.—Interfemoral membrane rather broad, truncated. Wings from the base of the toes. Legs bald. Feet small. Tail none. Head round; muzzle very short, depressed, broad; forehead rounded. Ears moderate, lateral. Chin with a triangular group of tubercles in front. Thumb elongated, the upper joint long, slender; the lower short. Cutting teeth $\frac{4}{4}$; the upper middle elongated, conical, acute; lateral and lower small, notched.

A. centurio, Epauletted Ametrida.

Ch. sp.—Sooty-brown; forehead, chin, and a spot on each shoulder at the base of the wing white. Heel-bone one-third the length of the shin. Arm-bones 11 lines. Ears moderate, rounded at the end, rather arched out at the sides. Tragus moderate, denticulate at the tip and outer side. Nose-leaf ovate, lanceolate.

Hab. Brazils, Para. Collected by Mr. J. P. G. Smith.

4. NICON.

Ch. gen.—*Membrana interfemoralis* distincta, brevis, angulariter insectata. *Alæ* ab summo talo tensæ. *Pedes* elongati, liberi. *Os calcis* brevis. *Cauda* perbrevis, inclusa, in mediâ membranâ interfemorali superior. *Mentum* striâ tuberculis parvis marginatâ insigne. *Pollex* elongatus; articulo superiore attenuato, inferiore incluso. *Dentes* incisores $\frac{4}{4}$; duo medii superiores largiores, truncati; inferiores seriatim fornicati.

Ch. gen.—Interfemoral membrane distinct, short, angularly cut out. Wings from the upper part of the ankle. Feet elongate, free. Heel-bone short. Tail very short, enclosed, superior in the middle of the interfemoral. Ears lateral. Chin with a groove in front, edged with small tubercles. Thumb elongate; upper joint thin, longest; lower enclosed. Cutting teeth $\frac{4}{4}$; two middle upper larger, truncate; lower in an arched continuous series.

N. caudifer, Leach's Nicon = *Glossophaga caudifer*, Geoff. Mem. Mus. iv. 418. t. 17 = *Monophyllus Leachii*, Gray, Zool. Sulph. 18.

Hab. Central America.

The two following belong to the tribe of Horse-shoe Bats, *Rhinolophina* :—

5. AQUIAS.

Ch. gen.—*Prosthema* permagnum, complicatum, parte posteriore lanceolatâ erectâ, tribus magnis cellis utrinque; processus centralis

compressus margine anteriore lato, expanso, foliaceo, lobato, medio basi convexo; ferrum equinum anterius magnum simplex expansum, centro inciso, setosum; labium inferius duabus verrucis triangularibus in medio notatum. *Mammæ* in pube distinctæ. *Alæ* a digitorum basi.

Nose-leaf very large, complicated; hinder part lanceolate, erect, with three large cells on each side in front; central process compressed, with an expanded broad foliaceous lobed front margin, and with a convexity in the front of its base edge, formed by a diverging ring on each side in front. The front horse-shoe large, simple, expanded, nicked in the centre, very hairy; lower lip with two triangular warts in the centre. Pubal teats distinct. Wings from the base of the toes.

This genus may be divided into two sections:—

1. The interfemoral acutely produced; tail as long as the shin and foot. *Rhinolophus luctus*, Temm.
2. Interfemoral truncate; tail as long as shin. *R. trifolius*, Temm.

We have a specimen in spirit in the Brit. Mus., which differs from Temminck's description of *Rh. luctus* in several particulars, but these differences may arise from his description having been taken from a dry specimen.

6. RHINONICTERIS.

Ch. gen.—*Prosthema* breve, erectum, cellâ utrinque, et alterâ anteriore in medio basi; processus centralis compressus, anterius planus; ferrum equinum emarginatum, concavum; inter nares culmen fimbriatum. *Aures* magnæ. *Alæ* a talo. *Dentes* incisores $\frac{4}{4}$ incisivi; superiores distincti; labium inferius triangulari tuberculorum mole scabrum.

Nose-leaf short, conical, erect, with a cell on each side and one in the centre of the front of its base; the central process compressed, flattened in front, and without any pit beneath; the horseshoe deeply nicked, concave, with a longitudinal anterior fringed ridge, ending in a pit behind, between the nostrils, and with a ridge over the nostrils on each side. Ears large, separate. Tragus none. Pubes —. Wings from the ankle. Cutting teeth $\frac{4}{4}$, notched; upper distinct; lower lip with a triangular group of small warts in front.

Type, *Rh. aurantius* = *Rhinolophus aurantius*, Gray; Eyre's Central Australia, i. 406. t. 1. fig. 1.

Hab. Port Essington.

3. DRAFTS FOR AN ARRANGEMENT OF THE TROCHILIDÆ OR HUMMING-BIRDS. BY J. GOULD, ESQ., F.R.S. (CONTINUED.)

Genus ERIOPUS.

Gen. char.—Bill straight, moderately long; tail slightly forked; tarsi thickly clothed with downy feathers, forming a thick ruff round the leg.

Sexes nearly alike in colour.

Type, *E. vesita*.

I beg to propose the above generic appellation for a section of this family, comprising those species distinguished by the extraordinary ruffs of downy feathers with which their tarsi are clothed, and by the sexes being nearly alike in the colour of their plumage. All the species known frequent the mountain districts of the Cordillerian Andes or the valleys immediately beneath them.

I possess five species of this form, and I have seen two others in the collection of Mr. Loddiges, which I believe to be equally typical.

Sp. 1. ERIOPUS VESTITUS.

Ornismya vestita, Gouy de Longuemare; Less. in Rev. Zool. 1838, p. 314; Boiss. Rev. Zool. 1839, p. 18, 1840, p. 8; Mag. de Zool. pl. —? *T. uropygialis*, Fras. Proc. of Zool. Soc. 1840, p. 15. *O. glomata*, Less. Echo du monde savant, young?

Sp. 2. ERIOPUS CUPREOVENTRIS.

Trochilus cupreiventris, Fras. in Proc. of Zool. Soc. 1840, p. 14. *Ornismya maniculata*, Less. Echo du monde savant. *Ornismya vestita* ♀, Gouy de Long. Rev. Zool. 1838, p. 314. *Ornismya glomata*, Less. Echo du monde savant, young?

Sp. 3. ERIOPUS ALINE.

Ornismya Aline, Bourc. Rev. Zool. 1842, p. 373; Ann. de Lyons, tom. v. 1842, p. 344. pl. xix.

Sp. 4. ERIOPUS MOSQUERA.

T. mosquera, Bourc. et Delatt. Rev. Zool. 1846, p. 306.

Sp. 5. ERIOPUS DERBYI.

T. Derbyi, Bourc. et Delatt. Rev. Zool. 1846, p. 306.

This group forms part of M. Lesson's *Race Vestipedes*, the genera comprised in which have not as yet I believe been defined.

4. AN ACCOUNT OF PALOLO, A SEA WORM EATEN IN THE NAVIGATOR ISLANDS. BY THE REV. J. B. STAIR, WITH A DESCRIPTION BY J. E. GRAY, ESQ., F.R.S. ETC.

The Rev. J. B. Stair kindly presented numerous specimens of this Sea Worm to the British Museum, but unfortunately most of the specimens are broken into short pieces, and as yet I have not been able to discover any specimen with a head. It appears to be a new genus allied to *Arenicola*, which may be thus described:—

PALOLA, Gray.

Body cylindrical, separated into equal joints, each joint with a small tuft of three or four spicula on the middle of each side. Head —? Last joint ending in a couple of tentacles. Eggs globular.

Palola viridis, n. s.

Green, with a row of round black spots down the middle of the dorsal? surface; one spot on the middle of each joint.

Hab. Navigator Islands.

I have found accompanying this worm a single specimen of a green *Nereis*, which differs from it in being paler green above and whitish beneath, shorter, more depressed, and furnished with white tentacles.

The following is the account which Mr. Stair kindly communicated to me with the specimen from Samoa:—

“*Palolo*.—Palolo is the native name for a species of Sea Worm which is found in some parts of Samoa (the Navigator Islands) in the South Pacific Ocean. They come regularly in the months of October and November, during portions of two days in each month, viz. the day before and the day on which the moon is in her last quarter.

“They appear in much greater numbers on the second than on the first day of their rising, and are only observed for two or three hours in the early part of each morning of their appearance. At the first dawn of day they may be felt by the hand swimming on the surface of the water; and as the day advances their numbers increase, so that by the time the sun has risen, thousands may be observed in a very small space, sporting merrily during their short visit to the surface of the ocean. On the second day they appear at the same time and in a similar manner, but in such countless myriads that the surface of the ocean is covered with them for a considerable extent. On each day, after sporting for an hour or two, they disappear until the next season, and not one is ever observed during the intervening time. Sometimes, when plentiful at one island in one month, scarcely any are observed the next; but they always appear with great regularity at the times mentioned, and these are the only times at which they are observed throughout the whole year. They are found only in certain parts of the islands, generally near the openings of the reefs on portions of the coast on which much fresh water is found, but this is not always the case.

“In size they may be compared to a very fine straw, and are of various colours and lengths, green, brown, white and speckled, and in appearance and mode of swimming resemble very small snakes.

“They are exceedingly brittle, and if broken into many pieces, each piece swims off as though it were an entire worm. No particular direction appeared to be taken by them in swimming. I observed carefully to see whether they came from seaward or rose from the reef, and feel assured they come from the latter place.

“The natives are exceedingly fond of them, and calculate with great exactness the time of their appearance, which is looked forward to with great interest. The worms are caught in small baskets, beautifully made, and when taken on shore are tied up in leaves in small bundles, and baked. Great quantities are eaten undressed, but either dressed or undressed are esteemed a great delicacy. Such is the desire to eat Palolo by all classes, that immediately the fishing parties reach the shore, messengers are despatched in all directions with large quantities to parts of the island on which none appear.

“JOHN B. STAIR.”

5. NOTES ON CERTAIN MOLLUSCOUS ANIMALS. BY ARTHUR ADAMS, Esq., R.N., ASSISTANT SURGEON TO H.M.S. SAMARANG.

The following notices refer to the animals that construct the shells of *Pyrula*, *Calpurnus*, *Radius*, *Terebellum*, *Rostellaria*, *Eulima*, *Stilifer* and some others, which I believe have not before been described, though the shells have long been known. The drawings were made from the living mollusks on the spot.

The genus *Bullina* of Risso or *Cylindrella* of Swainson has an external subcylindrical shell covered with a thin reddish-brown epidermis. The mantle is enclosed; the foot elongate, linear, truncated, and with three conical tubercles behind. The cephalic disc is sub-trigonal, broad, rounded in front, and produced behind on each side into a flat tapering process, with the eyes on the outer side of its base. They crawl very slowly, moving by an almost imperceptible series of undulations of the foot. Dredged in fifteen fathoms, between Borneo and Billiton. Mr. Gray informs me that M. Lovèn has recently described the animal of a northern species of this genus under the generic name of *Cylichna*.

The animal of *Akera*, Müller, *Vitrella* of Swainson, or the *Bulla resiliens*, is pale brown, with the foot very much expanded, narrower and rounded in front, broad and truncated behind, and with the sides sometimes bent up. The head-disc is elongated, rather broader, and slightly notched in front, but narrower and linear behind. Eyes none. The shell is perfectly external, and there is a fimbriated edge projecting through the slit in the spire. From Unsang, Borneo.

This animal agrees with Lovèn's description of the northern species. Müller figures the animal of *Akera bullata*, a northern species of this genus, in the 'Zoologia Danica'; and M. Lovèn in his recent work has observed, that Muller's species emits through the slit in the back of the whorls a series of elongated slender beards, which are appended to the mantle's edge.

The mollusk that constructs the shell of *Bulla smaragdina* would appear to form the type of a new genus. The shell is naked above. The foot moderate, rounded before and behind; the side-edges reflexed and covering the sides of the shell. The head-disc is five-sided, rather broader on each side in front, flattish above with two small tubercles in front of the central eyes, and narrower and nicked behind. It is amphibious, though entirely marine, crawling slowly on rocks immediately above the ripple of the sea. The eyes are black and sessile; the tentacula short and anterior to the eyes. The animal is dark olive-green, with the margin of the foot and mantle of a light colour, and mottled and speckled. Cagiani Islands and Disaster Island near Japan.

In *Calpurnus* of De Montfort the mantle adheres to the sides, but does not cover the shell. It is dead-white and covered with round black spots. The foot is large, thin, flat, expanded, and marked like the mantle. The tentacula are tapering with a broad black band near their extremities. The eyes are large and black, and are placed

at the outer base of the tentacles. The longest slope and narrowest end is the forepart of the shell.

Taken alive at the southern extremity of Mindoro, not far from Ylin: in shallow water and on a sandy bottom.

In *Radius* or *Ovulum Volva* the mantle is covered with nipple-shaped tubercles, the nipples and areolæ of which are dark-coloured. The tubercles extend to the extremities of the beaks of the shell. The foot is moderate and folded longitudinally. The tentacles are elongate and subulate. Dredged in five fathoms from a rocky coral bottom on the shores of Basilan.

The *Radius* is slow and languid in its movements, sliding along deliberately, and not more sensible to alarm than *Cypræa* or *Calpurnus*.

In the genus *Pyrula*, Lamk. (*Ficula* of Swainson), the siphon is elongate, subcylindrical, and produced in front. The head slender; the tentacles subulate, on the side of the extremity of the head, and separate from one another at their bases. Eyes sessile on the outer side of the base of the tentacles. The mantle is produced on each side into a rounded lobe equally reflexed on each side of the shell. The foot is very large and expanded; rounded in front, and rather produced on each side of the anterior margin, and expanded and broad with a small central point behind. There is no operculum. The head is marbled with light violet and the tentacles white. Six white opaque spots are arranged round the upper surface of the edge of the foot. There is another very beautiful species of *Ficula* with a pink mantle, mottled with white and deeper pink, the under surface of the foot dark chocolate-colour with sparse yellow spots. The first-mentioned species is from the west coast of Borneo, from seventeen fathoms, muddy bottom, and the latter from thirty-five fathoms in the sea of Mindoro.

Mr. Gray has observed that Lamarck established his genus *Pyrula* on this species, *Bulla ficus*, Linn., therefore the generic name should be retained for this form of animals, which he regards as an intermediate link between *Muricidæ* and *Cypræidæ*.

The animals of *Ancillaria* crawl with a sliding motion and with considerable celerity. The specimens we found on the east coast of Africa were of a dirty white colour with dull brown blotches. When alarmed, the entire animal is retracted within the shell.

The genus *Marginella* has an elongated slender tapering siphon, with the tentacles also elongate and slender, bearing the eyes at their outer side just above the base. The foot is large, broad, truncated in front, rather acute behind, and extends beyond the shell on all sides. The mantle is thickened, and reflexed partly over the entire circumference of the shell. The animal, when roughly handled, retracted itself entirely into the shell. Dredged up in three fathoms water, sandy bottom, not far from Anger in Java.

A second species from the east coast of Africa is similar to the former, but the foot is rather more expanded and more rounded behind. The left side of the mantle is rather more produced over the

back of the shell than the right. The end of the tentacula and siphon in this species is yellow and the basal part streaked with carmine. The foot and mantle are semi-transparent flesh-colour, streaked with deep carmine.

These *Marginella* are quicker and more lively in their movements than *Cypræa*, crawling pretty briskly and moving their tentacles in various directions.

The head of *Eulima* is small; the tentacles are subulate, close together at the base, rather thicker at that part, and slender beyond. The eyes are placed on the back of the head behind the base of the tentacles. The foot is rather expanded, rounded and somewhat produced on each side in front, and rounded in behind. Operculum ovate, subspiral. The animal is entirely opaque pearly white. The eyes black and generally concealed under the front of the shell. Tentacles yellow at the tip, orange in the middle, and white at the base.

Mr. Gray states that he places this genus with the family *Pyramidellidæ* in his arrangement, and it chiefly differs from *Pyramidella* in having no plaits on the pillar-lip. It is a slow and excessively timid animal. From eight fathoms water; Philippines.

The tentacula of the more elongated species of *Melania* are subulate, close together at the base, with the eyes on short peduncles on the outer side of the base. The trunk is oblong, expanded and annulated, with a central cylindrical groove. The foot is expanded, rather produced and acute behind, with the operculum on the front of the upper surface. Operculum orbicular and many-whorled. They are generally found partially buried in the ooze formed by decayed vegetable matter where weeds abound, and where the water is verging towards stagnation.

The animal of *Turritella* is rather small for the size of the aperture of the shell; the head is small and oblong; the tentacula short and subulate, with the eyes on the middle of their outer side. The foot is moderate and slightly notched in front. Operculum orbicular, horny, many-whorled, with an epidermic fimbriated margin.

This mollusk is very shy and sensitive, retiring quickly within its shell on the slightest alarm. It is slow-moving and inactive.

The tentacula of *Pleurotoma* are subulate and close together at the base, and the eyes are near the outer side of the tip, which latter tapers off beyond them. They generally inhabit pretty deep water and crawl tolerably fast.

Fusus, Lam., has an elongated subcylindrical siphon, with subulate tentacles close together at the base, and becoming more slender beyond the eyes. Eyes placed rather above the middle of the outer side. Foot moderate. Operculum annular, oblong.

The *Cerithium truncatum* has a broad suborbicular and expanded foot, and an elongated subcylindrical annulated trunk. The tentacula are short with the eyes at the tip. It is found generally in brackish water in mangrove swamps and the mouths of rivers. Sometimes they crawl on the stones and leaves in the neighbourhood, and sometimes they are found suspended by glutinous threads to boughs

and the roots of the mangroves. Mr. Gray (vide Proc. Z. S. 1833, p. 112) states he has found the *Rissoa* similarly suspended. From the swamps of Singapore and banks of rivers in Borneo.

The animals of *Quoyia* are amphibious like *Conovuli*, being found in the shallow water at the roots of the mangroves or adhering to stones not far inland, but exposed to the sun. They are fond of those little bays where the water is shallow and the ripple gentle.

In *Phorus* the separation from the foot is by a large space produced into a subcylindrical annulated trunk. The tentacles are tapering and elongate, with the eyes sessile on the outside of their base. The foot is small and divided into two parts, the front rather expanded, the hind part small and tapering, carrying a large operculum. Operculum ovate, subannular? Penis elongate fusiform from the right side, rather below the base of the tentacula. These animals are small for the size of the mouth of the shell, and have much the general appearance of the animal of *Strombus*, like which they appear to walk, but their eyes are sessile. In colour they are dull opake white, the proboscis pinkish and the eyes black. They crawl like a tortoise by lifting and throwing forward the shell with the tentacles stretched out, the proboscis bent down and the operculum trailing behind. They are numerous in the Javan and China seas, preferring deep water, and a bottom composed of detritus of dead shells and sand mixed with mud.

This genus has been generally placed with the *Trochi*, and some have proposed to remove it to near *Calyptraea*; but Mr. Gray, in his systematic arrangement of the genera of mollusca published in the Synopsis to the British Museum (1840), p. 119, formed for this genus a peculiar family under the name of *Phoridae*, having observed that the animal, though a *Phytophagous* mollusk, had the annular operculum of the *zoophagous* division.

The animal of *Terebellum* has an annulated elongate proboscis with a central groove. The eyes are on the end of long cylindrical peduncles, one placed on each side of the base of the trunk and unequal in length and origin. The body is thick and short; the foot ovate, broad, rounded in front and tapering behind. Operculum triangular, small, and serrated on the outer side with a great part free. This genus is on the confines of the family of *Strombidae*, where Mr. Gray first proposed to place it (see Synopsis, British Museum, 1841, p. 84, and 1842, pp. 52 and 89), for it agrees with the animal of that group in having the eyes placed at the ends of elongated peduncles, and in having the operculum triangular and serrated on the outer edge; but it differs from them in having no tentacula arising from the upper part of the peduncle beneath the eyes, and in having a thicker body and a broader and flatter foot.

One specimen, from which I made a sketch, was taken in the Javan sea, the other is from the Caramata Passage.

The animal is exceedingly shy and timid, retracting its body into the shell on the slightest alarm. It will remain stationary for a long time, moving its tentacula about cautiously in every direction, when suddenly it will roll over its shell and continue again perfectly quiet.

With regard to *Rostellaria rectirostris*, or more properly *rectirostrata*, I have a few words to say before I conclude this somewhat desultory communication.

The animal of this genus is exactly like that of *Strombus*. The body is subcylindrical, marbled with rich brown on the outer side, and white on the inner and front side. The trunk is subcylindrical, and annulated with a central broad line of deep bronze-black. The margins yellow with a narrow vermilion line externally. The eyes are on long cylindrical peduncles, of a deep blue with a black pupil. The tentacula are subulate, elongate, arising from the peduncle rather below the eye. The foot is narrow, rather dilated in front and small behind. The operculum is ovate, triangular, annular, semi-transparent and horny. Living in black muddy sand in thirty-one and a half fathoms water. The specimen I figured was dredged on the coast of Borneo.

Rostellaria has all the habits of the *Strombidae*, progressing by means of its powerful and elastic foot, which it places under the shell in a bent position, when suddenly by a muscular effort it straightens that organ and rolls and leaps over and over. It is however far more timid and suspicious than *Strombus*, which has a bold disposition.

The animal of the genus *Stilifer*, which I found living on the body of a starfish (*Asterias*) on the coast of Borneo, had two elongate subulate tentacles, with the eyes sessile near the outer side of their base, and a small rounded head. The mantle is entirely enclosed and covered by the thin shell, and the foot is narrow, slender, very much produced beyond the head in front and scarcely extended at all behind.

The animal of this genus was described and figured in Mr. Sowerby's 'Genera of Shells' from a specimen in spirits brought home by Mr. Cuming, where the fleshy part enveloping the shell in its contracted state was considered as the mantle.

Mr. Gray, in the Synopsis before referred to (ed. 1842, p. 60), from the examination of these figures, placed the genus in the family of *Naticidae*, and observes that "what has been called the enlarged mantle appears like the foot;" and the above description of the animal shows the accuracy of Mr. Gray's conclusion, both as to the proper nature of the fleshy part and the position of the genus in the system.

In the shallow pools left by the receding tide on the shore of Koo-Kian-San, one of the Maiacoshima group of islands, I discovered a large species of *Dorididae*, which appears to be the type of a new genus, differing from all the other genera of the family in having the vent, and the gills which are extruded from it, situated beneath the edge of the mantle, which latter is extended beyond the circumference of the foot, while in all the other genera, as far as I am aware of, the vent and gills are situated on the mantle itself. This genus may be called *HYPOBRANCHIÆ* *.

* ὑπο (*sub*), βραγχίαια (*branchiis prædita*). The specific name might be "depressa," from its flattened appearance.

Ch. gen.—Brachiis ano circumdatis, sub posteriore pallii margine positus. Pallio lato, ultra pedem extenso; duobus tentaculis claviformibus; corpore depresso.

The animal (*Hypobranchia fusca*) was of a sandy colour, the central disc deeper, with oblong blotches of a dark brown colour. In length about six inches, and in breadth two and a half. The under surface was light chocolate-colour, and the tentacula reddish brown. It crawled upon its flattened ventral disc in a slow and languid manner, and when detached and thrown into deeper water floated some time by undulating the free thin edges of the mantle, and gradually sunk to the bottom.

6. DESCRIPTIONS OF NEW SPECIES OF SHELLS COLLECTED IN THE EASTERN ARCHIPELAGO BY CAPT. SIR EDWARD BELCHER AND MR. ADAMS DURING THE VOYAGE OF H.M.S. SAMARANG. BY LOVELL REEVE, F.L.S.

CHITON COREANICUS. *Chit. testâ ovatâ, elevatiusculâ, valvis terminalibus cæterarum areisque lateralibus radiatim sulcatis, interstitiis convexis peculiariter granatis, granis prominentibus, rotundatis, solitariis, valvâ terminali posticâ umbonatâ, extremitate radiatâ parvâ, brevi; areis centralibus longitudinaliter tenuissimè granato-liratis, lirarum interstitiis excavatis; areis lateralibus nigricante-viridibus, granis lutescentibus, areis centralibus lutescentibus nigro varîe maculatis et variegatis; ligamento tenuiter granoso-coriaceo, nigricante-viridi et virescente concinnè tessellato.*

Long. $1\frac{5}{8}$ poll.; lat. 1 poll.

Hab. Korean Archipelago, under stones.

The sculpture of this species is not much unlike that of the *C. luridus*; still it is distinct, and accompanied with a very characteristic style of painting. The central areas of the shell are of a yellowish ground, blotched and variegated with black. The terminal and lateral areas are very dark green, with the prominent granules conspicuously tinged here and there with yellow. In addition to these peculiarities, the ligament is strikingly tessellated with dark and pale sea-green.

CHITON FULIGINATUS. *Chit. testâ oblongâ, valdè elevatâ, valvis terminalibus cæterarum areisque lateralibus subirregulariter concentricè striatis, prope marginem incisâ, areis centralibus lævibus, sub lente minutissimè reticulatis; sordidè albâ, nigro plus minusve sparsim fuliginatâ; ligamento corneo, angusto, fusco.*

Long. $\frac{5}{8}$ poll.; lat. $\frac{5}{16}$ poll.

Hab. Korean Archipelago.

The terminal and lateral areas, the latter of which are so slightly raised as to be nearly on a plane with the rest of the shell, are striated concentrically, the striæ next the margin being somewhat deeply engraved. Of numerous specimens collected at the above-mentioned islands, all are of an uniform dull white, more or less sparingly besooted with black.

CHITON ACUTIROSTRATUS. *Chit. testâ elongatâ, medio elevatâ, lateraliter subcompressâ, valvis summitate obtuso-carinatis, lævibus, utrinque creberrimè planigranatis, umbonibus productis, acutè rostratis, valvarum areis lateralibus parvis, subindistinctis, concavis; albida, summitate nigro hic illic inquinatâ; ligamento corneo, spicularum cristâ parvâ ad latus utriusque valvæ munito.*

Long. $1\frac{1}{8}$ poll.; lat. $\frac{1}{2}$ poll.

Hab. Cape Rivers.

An elongated species, of somewhat angularly compressed growth, remarkably distinguished by the sharply beaked structure of the umbones; the flatly-grained sculpture of the valves approaches that of *C. hirudiniformis*, to which it offers a singular contrast of colour.

CHITON PETASUS. *Chit. testâ parvâ, subabbreviato-ovatâ, valvis medio areâ trigonâ subrostratâ politâ, utrinque rugoso-granatis; vividè coccinèd; ligamento latissimo, præcipuè anticè, quoque vividè coccineo, setis pilisve brevibus hic illic obsito.*

Long. 1 poll.; lat. $\frac{3}{4}$ poll.

Hab. Cape Rivers.

A beautiful little bright scarlet shell enframed within a broad swollen ligament of the same very striking colour; in the form of the ligament it is the nearest approach I have seen to that remarkable species the *C. Blainvillii*.

CHITON FORMOSUS. *Chit. testâ oblongâ, subangustâ, valvis undique subtilissimè longitudinaliter striatis; vividè coccinèd; ligamento corneo, spiculis vitreis nitidè albis densè obsito, spicularum cristâ densâ erectâ ad latus utriusque valvæ.*

Long. $\frac{1}{2}$ poll.; lat. $\frac{3}{16}$ poll.

Hab. Cape Rivers.

A most exquisite little species of a bright scarlet colour, surrounded with dense tufts of white shining glassy spiculæ. Of this and the two preceding species only a single specimen of each was obtained.

CARDIUM BECHEI. *Card. testâ subcordato-ovatâ, medio et anticè lævigatâ, striis minutis superficiariis radiantibus et concentricis sub lente decussatâ, epidermide tenui cornèd nitente in funiculis fibrisve concentricis creberrimè dispositâ; areâ posticâ, epidermide nullâ, radiatim costatâ, costis tenuibus, confertis, quinque et viginti ad triginta, spinis brevibus compressis densissimè seriatim ornatis; undique pulcherrimè rosèd, intus albâ.*

Alt. 2 poll.; lat. $1\frac{7}{8}$ poll.

Hab. Sooloo Seas and Korean Archipelago.

I have much pleasure in dedicating this species, at the desire of Capt. Sir Edward Belcher, to Sir Henry De la Beche, Director of the Ordnance Survey and President of the Geological Society. It forms a most interesting addition to the genus *Cardium*, and is without exception the most striking and distinct from any hitherto known that can well be imagined. In colour it is of a pure rose tint, with the following singular contrast of character. The middle and anterior portion of the shell is smooth, presenting a peculiar soft velvety

appearance, the effect of its being minutely decussated with concentric and radiating striae, and covered with an exquisite thin shining horny epidermis, disposed in fine concentric cords, abruptly terminating at the posterior area. The posterior portion, accordingly destitute of epidermis, is very thickly rayed with ribs of short compressed spines, as if the delicately clad surface of the shell had been thus far ploughed up, as it were, into furrows.

Only two odd valves of this pre-eminently beautiful shell were obtained, and, singularly, in localities very remote from each other; one was dredged at the depth of forty fathoms in the Sooloo Seas, between the islands of Borneo and Mindanao; the other in the Yellow Sea, thirty degrees north, at one of the islands of the Korean Archipelago.

March 23, 1847.

William Yarrell, Esq., Vice-President, in the Chair.

The following communications were read :—

1. NOTE ON THE BREEDING OF THE OTTER IN CONFINEMENT IN THE ZOOLOGICAL GARDENS, REGENT'S PARK, IN 1846. BY JAMES HUNT, HEAD KEEPER.

The female Otter was presented to the Society by Lady Rolle on the 4th of February 1840, being apparently at that time about three months old. She remained without a male till the 11th of March 1846, when a large male was presented to the Society by the Rev. P. M. Brunwin, of Braintree, Essex, in whose possession it had been for some months, and had been kept in a cellar. His weight when first taken was 21 lbs., but he was not above half that weight when he arrived at the Gardens, having wasted much in confinement and become very weak in the loins, from which he soon recovered after his arrival. About a month after his arrival there was a continual chattering between him and the female during the night, which lasted for four or five nights; but they did not appear to be quarrelling. Nothing further was observed in their manners or in the appearance of the female to make me think she was with young, until the morning of the 13th of August, when the keeper that has the charge of them went to give them a fresh bed, which he does once a week; while in the act of pulling out the old bed he observed two young ones, apparently five or six days old, and about the size of a full-grown rat: he immediately put back the bed, with the young on it, and left them. On the 21st the mother removed them to the second sleeping-den, at the other end of their enclosure, and several times after she was observed to remove them from one end of the house to the other, by pushing them before her on a little straw; her object in removing them appeared to be to let them have a dry bed: on the 9th of September they were first seen out of the house; they did not go into the water, but crawled about, and appeared very feeble.

On the 26th of September they were first seen to eat fish, and follow the mother into the water: they did not dive into the water like the mother, but went into it like a dog, with their head above water; and it was not until the middle of October that they were observed to plunge into the water like the old ones. On the 22nd of December the water was let out of the pond for the purpose of cleaning it, which is done once a week: the animals were shut up in their sleeping-den, but they let themselves out when the pond was but half-full of water, and the young ones got into it and were not able to get out without assistance; after they had been in the water

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some minutes the mother appeared very anxious to get them out, and made several attempts to reach them from the side of the pond where she was standing; but this she was not able to do, as they were not within her reach. After making several attempts in this manner without success, she plunged into the water to them, and began to play with one of them for a short time, and put her head close to its ears, as if she was making it understand what she meant; the next moment she made a spring out of the pond, with the young one holding on by the fur at the root of the tail with its teeth; having safely landed it, she got the other out in the same manner: this she did several times during a quarter of an hour, as the young ones kept going into the water as fast as she got them out. Sometimes the young held on by the fur at her sides, at others by that at the tail. As soon as there was sufficient water for her to reach them from the side of the pond, she took hold of them by the ears with her mouth and drew them out of the pond, and led them round the pond close to the fence, and kept chattering to them, as if she was telling them not to go into the pond again.

2. NOTES IN ADDITION TO FORMER (Zool. Proc. 1843, p. 108, and 1846, p. 9) PAPERS ON SOUTH AMERICAN ORNITHOLOGY. BY T. BRIDGES, ESQ., CORR. MEMB.

The beautiful species of *Eudromia* mentioned in my letter to Mr. Waterhouse (Proc. for 1846, p. 9) proved to be the bird characterized by Mr. Vigors under the name of *Tinamotis Pentlandii* (Proc. 1836, p. 79). On September 15, 1845, I found three couple in the pass of Tapaquilcha, between the town of Calama and the city of Potosi: they were close to the snow, at an altitude of about 14,000 feet, with the *Pepoazæ*, skulking among the isolated stones which not unfrequently occur in grassy places in the valleys of the main chain of the Andes. When they rise they utter a shrill and loud whistle, and fly a mile perhaps, getting up rapidly and shooting off in a horizontal direction.

About twenty miles further on the road I stopped at a post-house, and there the natives brought a fresh-laid egg, which they said was the egg of this species. There could be no doubt about it, as I was engaged at the time in skinning one of the three specimens we had obtained. It was light green, larger than a lapwing's, and very obtuse at each end. It had none of that polished texture which is so characteristic in the Tinamous. I regret that it was accidentally broken.

Although I sought for this bird in many similar situations throughout Bolivia, I never again succeeded in finding it.

Tinamotis elegans; *Eudromia elegans*, D'Orb. & Geoff. Mag. de Zool. 1832, t. 1.

I met with this species on the eastern side of the Andes—I believe it never occurs on the Chilian side—in the vicinity of the city of Mendoza, in the Argentine Republic. It has an immense range over the grassy plains at the base of the Andes which run southward

to Patagonia. I believe it generally is found in pairs; at least the only two I ever saw alive were together. My men informed me that it is abundant on the Pampas, near the forts of San Raphael and San Carlos, between 33° and 34° south lat.* The young bird presents no difference in plumage from the adults, having even the crest well-developed: it seems therefore to form an exception to the generally received rule, that where the parent birds have the same plumage the young is different from either.

The Indians have a singular method of taking this bird. Having attached a noose to the end of a cane four or five yards long, they walk round and round in gradually contracting circles, until they are near enough to slip the noose over its head, and then, with a sudden jerk, they strangle it.

Attagis Gayii, Geoff. et Lesson, Cent. Zool. t. 47.

I believe the Chilean and Bolivian species are identical. I found the bird on the same day as *Tinamotis Pentlandii*, inhabiting the margins of frozen brooks near the post-house of Tapaquilcha. The Indians there know it as the Pucopuco, from its call-note. Like *Thyncororus D'Orbignianus*, these birds evince great attachment to each other, and call immediately if separated. At that season they were in pairs and breeding, but I did not obtain the egg.

Diglossa carbonaria, D'Orb. & De Lafres.

Diglossa sittoides, D'Orb. et De Lafr.

Birds of this genus are found in the temperate region, where the thickets commence, at an altitude of from 8000 to 10,000 feet. I found these species among bushes of *Salvia* and *Eupatorium*, on the slopes which fall into the valley of Cochabamba, and most abundantly at a place called Ticquepaya. They have precisely the habits of flycatchers. *D. carbonaria* I have watched often, sitting motionless on the highest twig of a bush until he discovered a passing insect, on which he descended, and then returned to his post. I may mention that the vicinity of Cochabamba was the only district in which these two species occurred to me.

Diglossa mystacalis, De Lafr.; *Diglossa mystacea*, G. R. Gray in Gen. of Birds, pl. 42.

Lives entirely in the thickets, hopping from bough to bough, as if in pursuit of insects. I have often seen this species insert its bill into a scarlet and purple flower allied to the *Arbutus*, but whether for the purpose of capturing insects or of extracting honey I was not able to ascertain. Its habitat is the Yungas of La Paz.

I believe that the specimen described by M. le Baron De Lafresnaye was from my collection.

Colaptes rupicola, D'Orb., is a Bolivian species, entirely terrestrial. I found it on the elevated table-land called the Punas, which form the departments of Potosi, Chuquisaca, Cochabamba, La Paz, and

* The specimens now in the British Museum were obtained from this locality, as well as those of *Rhea Darwinii*.

Oruro. They are occasionally intersected by valleys and isolated mountains, but the unbroken plains are sometimes several leagues in extent. You find *C. rupicola* at an altitude of 12,000 to 14,000 feet, and generally in the grass, where it feeds. On being disturbed it takes an undulating flight towards some rock, on which it settles, for this country is entirely destitute of trees. It most frequently occurs in little companies of five or six.

Another species of *Colaptes*, which frequents the warm plains of Moxas, near the town of Trinidad, not unfrequently resorts to the trees which there grow in forest patches, and in this particular it resembles *C. chilensis*.

The genus *Dendrocolaptes*, as far as I have had opportunities of observing their habits, exactly resemble the woodpeckers, ascending the trees and searching the bark in a similar manner, and even supporting themselves by the tail. In the plains between the Indian town of Loretto and Trinidad, about long. 62°, I found a beautiful instance of the modification of form to a particular end, in the apparently singular species

D. procurvus, D'Orb. & De Lafr.

As far as my experience goes, it only occurs in the open palm-groves which crown the undulating elevations which here and there rise up above the ordinary level of this district. In them I found a palm called Mutacu, with foliage like the date-palm. The short peduncles of the fallen leaves afford shelter to numerous coleoptera, and they grow from the trunk in a curve exactly similar to that which characterizes the bill of this species, so that as he runs up the trunk he is able to search all these lurking-places to the very bottom, although their form renders them impregnable to every other assailant.

In the dense forests, where this particular palm is never to be found, I observed an abundance of the other species, but *D. procurvus* not once.

3. DRAFTS FOR A NEW ARRANGEMENT OF THE TROCHILIDÆ. BY JOHN GOULD, F.R.S. (CONTINUED—SEE ANTE, pp. 7, 16.)

The *Ornism. Sappho* of Lesson, and a nearly-allied species which I shall describe in the present paper, appear to differ in so many characters from all the genera of this family hitherto instituted, that I propose to place them in a distinct genus or subgenus, under the name of COMETES, with the following characters:—

COMETES, nov. gen.

Char. gen.—*Rostrum* capite longius, cylindraceum, decurvatum. *Cauda* valdè furcata, plumis latis, truncatis. *Tarsi* nudi. *Pedes* moderati. *Digitus* et *unguis* postici digito et ungue mediis breviores.

Gen. char.—Bill longer than the head, cylindrical, and curving downwards; tail much-forked, feathers broad and truncate; tarsi bare; feet moderately large; hind-toe and claw shorter than the middle toe and claw.

1. COMETES SAPHO. *Ornism. Sappho*, Less., Ois. Mouch. t. 27, 28.

2. COMETES PHAON, sp. nov. *Com. (Mas) capite, collo, alarum tectricibus, et corpore inferiore, brunni-viridibus; dorso, caudæ tectricibus, caudæque, intensè fulgente coccineis; rectricibus ad basin nigro-fuscis, ad apicem holosericis atris; alis fuscis purpurascensibus; gula luminosè metallicè viridi.*

Male.—Head, neck, wing-coverts and under surface brownish green; back, upper tail-coverts and tail rich deep lustrous crimson; bases of the tail-feathers blackish brown; the tips deep velvety black; wings purplish brown; throat rich lustrous metallic green.

Female.—Tail of the same crimson colour as that of the male; she also possesses the lengthened and curved bill.

Total length, 7 inches; bill, $1\frac{1}{8}$; wing, $2\frac{3}{4}$; tail, 4.

This fine species is a native of Peru, and differs from the *Sappho*, which inhabits Bolivia, in having the tail rich crimson instead of flame-colour, and in having a much longer and more curved bill. The two specimens exhibited, which are male and female, have been kindly lent me, for the purpose of describing, by the Earl of Derby.

4. ON EIGHT NEW SPECIES OF AUSTRALIAN BIRDS; AND ON ANTHUS MINIMUS, VIG. AND HORSEF., AS THE TYPE OF A NEW GENUS CHTHONICOLA, GOULD. BY JOHN GOULD, F.R.S.

ARTAMUS ALBIVENTRIS. *Art. loris, spatio infra oculum, et mento, atris; capite, collo, et dorso superiore, fusco-griseis; pectore et abdomine pallidè griseis, colore griseo in tectricibus caudæ inferioribus albo mergente; tectricibus caudæ superioribus, caudæque, nigris; tertid parte apicali rectricum omnium, intermediis duabus exceptis, albd.*

Lores, space beneath the eye and the chin deep black; head, neck and upper part of the back brownish grey; lower part of the back and the wings dark grey, becoming gradually deeper towards the tips of the feathers; primaries and secondaries narrowly edged with white at the tip; under surface of the wing white; ear-coverts, chest, and abdomen pale grey, passing into white on the under tail-coverts; upper tail-coverts and tail black; the apical third of all but the two middle feathers white; irides dark brown; bill yellowish horn-colour, becoming black at the tip; feet blackish brown.

Total length, 7 inches; bill, $\frac{7}{8}$; wing, $4\frac{1}{8}$; tail, $2\frac{3}{4}$; tarsi, $\frac{3}{4}$.

Hab. Darling Downs, New South Wales, &c.

Remark.—This species differs from the *A. cinereus*, to which it is most nearly allied, in the white colouring of the abdomen and under tail-coverts. Two specimens have come under my notice, both of which were killed by Mr. Gilbert, one on the Darling Downs, in New South Wales, and the other at Peak-range Camp, one of the stations so named by Dr. Leichardt during his expedition from Moreton Bay to Port Essington.

ACANTHIZA APICALIS. *Acan. plumis in fronte cervinis, fusco mar-*

ginatis; cauda lata fasciâ fusco-nigrâ prope apicem transversim ornata, apice ipso albo; tectricibus caudæ superioribus rufo tinctis.

Feathers of the forehead deep buff, edged with dark brown; all the upper surface, wings and tail light olive-brown; tail crossed near the extremity with a broad and distinct band of brownish black, and largely tipped with white; upper tail-coverts tinged with rufous; throat and chest greyish white, each feather margined with black, giving that part a mottled appearance; flanks, abdomen and under tail-coverts pale buff; irides light red; bill, legs and feet dark brown.

Total length, 4 inches; bill, $\frac{1}{2}$; wing, 2; tail, 2; tarsi, $\frac{7}{8}$.

Hab. Swan River, Western Australia.

Remark.—Distinguished from *A. Diemenensis*, *A. pusilla*, and *A. Ewingii*, to all of which it is nearly allied, by its large size, by its larger and rounder tail, by the broad and distinct band of black which crosses the tail-feathers near their extremities, and by their being largely tipped with white.

CYSTICOLA ISURA. *Cys. colli lateribus, nucha, et uropygio pallide rufis; vertice, dorso, secundariisque, saturatè brunni-nigris, singulis plumis stramineo marginatis, et latâ fasciâ atrâ transversim prope apicem infra ornatis.*

Sides and back of the neck and rump pale rufous; crown of the head, back and secondaries deep brownish black, each feather margined with buff; tail dark brown, margined with buff, and crossed on the under side near the tip with a broad conspicuous band of black; under surface deep buff, becoming paler on the chin and centre of the abdomen; bill brown; feet yellowish brown.

Total length, 4 inches; bill, $\frac{1}{2}$; wing, $1\frac{3}{4}$; tail, $1\frac{1}{2}$; tarsi, $\frac{3}{4}$.

Hab. Southern coasts of Australia.

Remark.—Distinguished from the other members of the genus by the shorter and more truncated form of its tail, which has suggested the specific term assigned to it.

CHALCITES OSCULANS. *Chal. capite, corpore superiore, alisque, nitente olivaceo-fuscis, colore eodem in humeris primariisque saturatione, sed in tectricibus caudæ superioribus albicante; caudâ intensè olivaceo-fusca, plumâ quâque ad apicem albâ; pectore et abdomine pallide cinnamominis.*

Head, all the upper surface and wings glossy olive-brown, becoming darker on the shoulders and primaries, and fading into white on the upper tail-coverts; tail dark olive-brown, each feather tipped with white, and the lateral one on each side crossed on the inner web with five bars of white; ear-coverts black, encircled with white; under surface of the wing, throat, breast and abdomen pale cinnamon-brown, fading into white on the under tail-coverts; bill brown; feet olive-brown.

Total length, $7\frac{1}{2}$ inches; bill, $\frac{7}{8}$; wing, $4\frac{5}{8}$; tail, $3\frac{7}{8}$; tarsi, $\frac{3}{4}$.

Hab. New South Wales.

Remark.—I have applied the term of *osculans* to this species, because in it are united in a remarkable degree the characters of the

genera *Cuculus* and *Chalcites*; but as those of the latter genus predominate, I have retained it therein.

SYNOÏCUS DIEMENENSIS. *Syn. fronte, loris, et mento griseo-albis, stramineo tinctis; vertice saturatè brunneo, medio lined stramineo notato; omni corpore superiore fasciis irregularibus transversis griseis, nigrisque, castaneisque, vario; mediis plumis lined griseo-albâ ornatis.*

Forehead, lores and chin greyish white, tinged with buff; crown of the head dark brown, with a line of buff down the centre; all the upper surface irregularly marked with beautiful transverse bars of grey, black and chestnut, each feather with a fine stripe of greyish white down the centre; primaries brown, mottled on their external edges with greyish brown; all the under surface greyish buff, each feather with numerous regular somewhat arrow-head-shaped marks of black, and many of them with a very fine line of white down the centre; bill blue, deepening into black at the tip; irides orange; feet dull yellow.

Total length, $8\frac{1}{2}$ inches; bill, $\frac{3}{4}$; wing, $4\frac{1}{2}$; tarsi, $1\frac{1}{8}$.

Hab. Van Diemen's Land.

Remark.—Nearly allied to *S. Australis*, but of a much larger size and with the markings of the upper surface more numerous and varied.

SYNOÏCUS SORDIDUS. *Syn. saturatè fuscus minutè nigro maculatus; mediis plumis corporis superioris inferiorisque latâ fasciâ griseo-cæruleâ longitudinaliter ornatis.*

General plumage dark brown, minutely freckled with black, each feather of the upper and under surface with a broad stripe of bluish grey down the centre; feathers of the head and back of the neck with a spot of blackish brown at the tip, those down the centre of the head and a few of the back feathers with white shafts; chin buff; flank-feathers with an arrow-head-shaped mark of black near the tip.

Total length, 7 inches; bill, $\frac{5}{8}$; wing, $3\frac{3}{4}$; tarsi, $\frac{7}{8}$.

Hab. South Australia.

Remark.—With the exception of *S. Sinensis*, this species is the least of the genus yet discovered; it moreover differs from them all in the absence of any varied markings, in lieu of which all the feathers of the upper surface have a broad bluish grey stripe down the middle.

PORZANA LEUCOPHRYS. *Por. fasciâ à mandibulæ superioris basi ad angulum oculi posticum ductâ griseo-albâ; maculâ latâ atrâ ab oculo ad rictum extensâ; nuchâ, corpore superiore, caudâque, fusco-nigris; capitis, colli, et pectoris, lateribus griseis; mento, et medio abdomine albis.*

From the base of the upper mandible to the posterior angle of the eye a streak of greyish white; from the eye to the gape a broad patch of deep black; crown of the head brownish black; back of the neck, upper surface and tail brownish black, each feather margined with pale reddish, the latter colour becoming very conspicuous on the wing-coverts and scapularies; wings pale brown; sides of the head,

neck and breast grey; chin and centre of the abdomen white; flanks and under tail-coverts rufous; upper mandible reddish brown; tomia of both mandibles tile-red; legs and feet oil-green, blotched with light ash-colour.

Total length, $6\frac{1}{2}$ inches; bill, 1; wing, $3\frac{1}{2}$; tail, 2; tarsi, $1\frac{3}{8}$.

Hab. Port Essington and Northern Australia.

Remark.—This bird differs from every other species of the genus inhabiting Australia, in having a superciliary stripe of white, in the black colouring of the lores, and in the olivaceous tint of the plumage.

PLOTUS NOVÆ-HOLLANDIÆ. *Plot.* (Mas) *gula figura sagittæ cuspidis albâ notatâ; latâ fasciâ albâ à mandibularum basi quatuor unciiis in colli latera extensâ; scapularibus lanceolatis, lanceolatâ maculâ in medio, et caulibus atris ornatis.*

Male.—An arrow-head-shaped mark of white on the throat; a broad stripe of the same colour commences at the base of the mandibles, extends for about four inches down the sides of the neck, and terminates in a point; head, neck and all the upper surface of the body greenish black, stained with brown and with a patch of deep rusty red in the centre of the under side of the throat; under surface deep glossy greenish black; wings and tail shining black; all the coverts with a broad stripe of dull white, occupying nearly the whole of the outer and a part of the inner web, and terminating in a point; scapularies lanceolate in form, with a similar shaped mark of white down the centre, and with black shafts, the scapular nearest the body being nearly as large as the secondaries, and having the outer web crimped and the inner web with a broad stripe of dull white close to the stem; the secondaries nearest the body with a similar white stripe on the outer web, close to the stem; centre tail-feathers strongly and the lateral ones slightly crimped; orbits naked, fleshy, protuberant, and of a yellowish olive, mottled over with brown specks; irides of three colours, the ring nearest the pupil being dull orange-buff; to this succeeds another of marbled buff and brown, and to this an outer one of orange-buff; naked skin at the base of the lower mandible wrinkled and yellow; upper mandible olive, under mandible dull yellow, both becoming brighter at the base; feet yellowish flesh-colour, becoming brown on the upper part of the outer toes.

Female.—Upper surface blackish brown, each feather margined with greyish white; under surface buffy white. In other respects similar to the male.

Total length, 36 inches; bill, 4; wing, $13\frac{1}{2}$; tail, 9; tarsi, 2.

Hab. The rivers of the whole of the southern coast of Australia.

Remark.—Very nearly allied to the *Plotus* inhabiting Java, but distinguished from it by the shortness of the scapularies and by its larger size.

Mr. Gould also exhibited to the Meeting a specimen of the *Anthus minimus* of Messrs. Vigors and Horsfield, and having pointed out the particulars in which it differs from the members of the genus *Anthus*, proposed to constitute it the type of a new genus, with the following appellation and characters:—

CHTHONICOLA, nov. gen.

Char. gen.—*Rostrum* breve, a basi descendens, mandibulâ superiore ad apicem lævè dentatâ, in lateribus compressâ. *Tomia* introrsum curvatæ. *Alæ* concavæ, primario primo perbrevis, tertio, quarto, quinto et sexto longitudine æqualibus. *Tarsi* moderati. *Digiti* breves, posticus medio brevior. *Ungues* anteriores magis quam in "*Antho*" curvati.

Gen. char.—Bill short, gradually descending from the base; the upper mandible slightly notched at the tip, compressed laterally; tomia curving inwards; wings concave; the first primary very short, the third, fourth, fifth and sixth nearly equal and the longest; tail slightly concave, and all the feathers of an equal length; tarsi moderately long; toes short, the hinder toe somewhat longer than the middle one; front claws more curved than in the genus *Anthus*.

5. DESCRIPTION OF A NEW SPECIES OF AMPHIOXUS FROM BORNEO.
BY J. E. GRAY, ESQ., F.R.S., ETC. ETC.

Capt. Sir Edward Belcher having most kindly sent to the British Museum the various species of reptiles, worms, &c. in spirit which had been collected during the voyage of H.M.S. Samarang, I hasten to lay before the Society the description of what appears to be a new species of Lancelet (*Branchiostoma*, Costa = *Amphioxus*, Yarrell), premising that I have sent a second specimen to Dr. Clarke, R.N., of Haslar, who has kindly promised to send me some anatomical details of it, which shall be communicated to the Society as soon as they arrive.

I may remark that the specimen from Borneo very much resembles in size the specimen which Mr. Couch obligingly sent to me from Cornwall, and, like it, is more silvery and considerably larger than numerous specimens I have received through the kindness of Dr. Kolliker from Naples. This difference in colour may arise from the Naples specimens having been placed in stronger spirits; but it gives the Cornish and the Borneon specimens much more the resemblance of Annelides, which generally have this metallic iridescent silvery hue.

The resemblance of the Borneon to the Cornish specimen is so striking, that it is very difficult to draw a distinction between them with neatness or brevity; yet they appear to my eye sufficiently different to induce me to regard them as distinct species, which the great geographical distance between their habitats renders probable.

Amphioxus Belcheri.—The Borneon Lancelet appears rather thicker and more convex on the sides than *Amph. lanceolatus*, and the convex ridge which occupies the place of the dorsal fin appears higher and more closely divided by internal transverse septa than in that species, and these septa appear more numerous. I have not been able to observe any beards on the margin of the mouth, which is thickened and rounded; but this may arise from the specimen not being in good condition, especially in this part where it has been injured by the spines of a *Spatangus* which was in the same bottle.

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Hub. Borneo, at the mouth of the river Lundu.

I may remark, that the comparison of these Lancelets from Naples, Cornwall and Borneo has induced me to think that most probably the species from Naples may be distinct from the Cornish. All our specimens are smaller and more opaque; the beards of the mouth appear finer; and the dorsal ridge above referred to appears comparatively smaller, even making allowance for the difference in the size of the specimens.

6. A FEW REMARKS ON THE GEOGRAPHICAL DISTRIBUTION OF BIRDS
IN THE WEST INDIES. BY WILLIAM DENNY, ESQ.

Humboldt, Vigors, Swainson and other eminent naturalists, lament the defective state of knowledge respecting the zoology of the West Indies. The Flora of Jamaica has been often successfully explored; the geology of a great portion has been investigated by De la Beche; the ornithology and entomology however remain nearly in the state in which they were left one hundred years since by Sir Hans Sloane. In all the departments of the natural history of the Antilles much still remains to the inquirer, but in zoology he has an almost unexplored field for his researches. The region of Tree-ferns has been left unexamined for the botanist, the western half of Jamaica for the geologist; but with the exception of about sixty species of birds noticed by Sloane and Browne, the entire ornithology is unknown*, including all the species peculiar to the mountainous districts.

About thirteen years since an attempt was made to send out a party of naturalists to examine the animals and productions of Jamaica, but it failed; and had the party reached those shores, I doubt that their researches would have thrown much additional light on zoology. The insalubrious nature of the climate in the low grounds, the excessive heat, and many other causes, would probably have rendered their exertions fruitless. The naturalist must alike be familiar with the inhabitants of the deadly swamp and the pathless mountain; he must brave the tropical heat and mountain cold, and the sudden transitions of temperature. It is only those inured to the climate by long residence, and who have had fortitude to resist its debilitating effects, or those born in the country whose habits are active and pursuits congenial, that can sustain these difficulties and dangers.

Placed at nearly equal distance from North and South America, it might be supposed that nearly an equal number of the species of each division of that continent might be found in Cuba and Jamaica. This supposition is not however fully borne out by observation, although from our knowledge of the ornithology of Terra Firma being extremely imperfect, it is difficult to render a conclusion free from error. It will hereafter appear, that of the birds of Jamaica, one-half are common to North America, while hardly one-fifth are also found in the southern region of the New World.

Of those species common to the islands more immediately under

* This want of information has been reduced very considerably at the present moment by the appearance of Mr. Gosse's work 'On the Birds of Jamaica.'

notice, and Mexico, a great identity of genera and species might be expected. Placed in the same degree of latitude, possessing many similar features in scenery, elevation, temperature and productions, with sufficient facility of communication for the feathered tribes, they might, without actual examination, be considered as constituting the same animal kingdom or province. But Mexico is united to the southern portion of the continent by land, while Jamaica is separated by leagues of sea, a great natural impediment to families possessing feeble powers of flight.

Wilson remarks that "in passing along the chain of the Bahamas, towards the West Indies, no great difficulty can occur from the frequency of these islands, nor even to the Bermudas, which are said to be six hundred miles from the nearest point of the continent." Whether this facility of communication between the United States and the greater Antilles may be sufficient to account for the greater preponderance of species from this division than from the southern, may by some be doubted; but it may be as well to bear in mind that the Raptores and long-winged families of the Insessores are common both to the States and Antilles, while the short-winged families are nearly all distinct.

There are many features of resemblance between the ornithology of Mexico and the great Antilles. Nearly all the birds common to the former and the United States are likewise found in Jamaica, while the latter possesses species supposed by Mr. Swainson to be peculiar to Mexico, and I believe that further investigation will tend to show that the distribution of species is very similar.

I will only make one remark, that many birds supposed to belong to the States are in reality tropical or West Indian, and merely very transient and in numerous instances accidental visitors to North America. For example, the *Columba Zenaida* is very rare in the States, while in Jamaica it is the most abundant species in the island, and was mentioned by Sir Hans Sloane.

I will pass over the migration of birds to and from the West Indies, as well as the influence that natural families of plants appearing in distant countries may have in producing it, as being beyond the limits which I have assigned to myself in these observations. I will now give a catalogue of all the birds that I have met with during a sojourn of six years in Jamaica, during which time my leisure hours have been constantly devoted to pursuits connected with natural history.

Birds common to Jamaica, Cuba, and the United States.

Land Birds.

- | | |
|-----------------------------|----------------------------------------|
| 1. Cathartes aura. | 6. Pandion haliaëtus (? carolinensis.) |
| 2. Buteo borealis. | 7. Strix flammea. |
| 3. Circus americanus. | 8. ——— asio. |
| 4. Haliaëtus niger. | 9. Hirundo fulva. |
| 5. Accipiter pensylvanicus. | |

- | | |
|---------------------------------------|----------------------------------------------|
| 10. <i>Caprimulgus carolinensis</i> . | 29. <i>Sylvicola coronata</i> . |
| 11. — <i>americanus</i> . | 30. — <i>maculosa</i> . |
| 12. <i>Alcedo alcyon</i> . | 31. <i>Vermivora solitaria</i> . |
| 13. <i>Tyrannus intrepidus</i> . | 32. <i>Fringilla tristis</i> . |
| 14. <i>Muscicapa ruticilla</i> . | 33. — <i>Zevanna</i> . |
| 15. — <i>virens</i> . | 34. <i>Dolichonyx oryzivorus</i> . |
| 16. — <i>fusca</i> . | 35. <i>Sturnella magna</i> . |
| 17. — <i>crinita</i> . | 36. <i>Icterus versicolor</i> . |
| 18. <i>Vireo olivacea</i> . | 37. <i>Corvus ossifragus</i> . |
| 19. <i>Merula minor</i> . | 38. <i>Picus carolinensis</i> . |
| 20. — <i>mustelinus</i> . | 39. <i>Cuculus carolinensis</i> . |
| 21. <i>Orpheus polyglottus</i> . | 40. <i>Certhia maculata</i> . |
| 22. <i>Sciurus aurocapillus</i> . | 41. <i>Columba leucocephala</i> . |
| 23. <i>Trichas personatus</i> . | 42. — <i>passerina</i> . |
| 24. <i>Sylvicola pusilla</i> . | 43. <i>Ortyx marylandus</i> . |
| 25. — <i>americana</i> . | 44. <i>Tyrannula Saya</i> . |
| 26. — <i>canadensis</i> . | 45. <i>Columba carolinensis</i> (Cuba only). |
| 27. — <i>minuta</i> . | |
| 28. — <i>pensilis</i> . | |

Birds of Jamaica and Cuba observed in Terra Firma, but unknown in North America.

- | | |
|-------------------------------------------|----------------------------------|
| 1. <i>Sarcoramphus papa</i> (accidental). | 4. <i>Muscicapa ferox</i> . |
| 2. <i>Polyborus brasiliensis</i> . | 5. <i>Icterus dominicensis</i> . |
| 3. <i>Circus rutilans</i> . | 6. <i>Trochilus furcatus</i> . |
| | 7. <i>Crotophaga ani</i> . |

Birds peculiar to the West Indies, and seldom if ever detected in the United States or Terra Firma.

[These birds have been observed in Jamaica and Cuba.]

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|--------------------------------------------------|--------------------------------------------|
| 1. <i>Accipiter fringilloides</i> , Vig. | 17. <i>Fringilla Zena</i> . |
| 2. <i>Falco sparveroides</i> , Vig. | 18. — <i>noctis</i> , Linn. |
| 3. <i>Hirundo thalassinus</i> , Sw. | 19. — <i>jamaicensis</i> , Linn. |
| 4. — <i>Tapera</i> , Linn. | 20. — <i>bicolor</i> , Linn. |
| 5. — <i>albicollis</i> , Vieil. | 21. — <i>lepida</i> , Linn. |
| 6. — <i>melanogaster</i> , Sw. | 22. <i>Carduelis mexicana</i> , Sw. |
| 7. — (undetermined). | 23. <i>Icterus bonano</i> , Linn. |
| 8. <i>Caprimulgus jamaicensis</i> , Bris. | 24. — <i>cucullatus</i> , Sw. |
| 9. <i>Todus viridis</i> , Linn. | 25. — <i>mexicanus</i> , Linn. |
| 10. <i>Merula jamaicensis</i> , Linn. | 26. — <i>brasiliensis</i> , Linn. |
| 11. — <i>fusca vel leucophthalma</i> (undescr.). | 27. — <i>mexicanus</i> *. |
| 12. — <i>dominicus</i> , Linn. | 28. — <i>baritus</i> , Linn. |
| 13. — <i>rubripes</i> , Temm. | 29. <i>Leistes humeralis</i> , Vig. |
| 14. <i>Sylvicola dominica</i> , Linn. | 30. <i>Corvus jamaicensis</i> , Linn. |
| 15. <i>Pyrrhula nigra</i> , Linn. | 31. <i>Trogon temnurus</i> , Temm. |
| 16. — <i>collaris</i> , Vig. | 32. <i>Psittacus leucocephalus</i> , Linn. |
| | 33. — <i>aestivus</i> , Linn. |
| | 34. <i>Psittacara nana</i> , Vig. |

* *Icterus xanthornis*.

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|----------------------------------------------------|---------------------------------------------------------|
| 35. <i>Picus carolinus</i> , <i>Linn.</i> | 49. <i>Columba montana</i> , <i>Linn.</i> |
| 36. — <i>percussus</i> , <i>Vig.</i> | 50. — <i>jamaicensis</i> , <i>Linn.</i> |
| 37. <i>Colaptes auratus</i> , <i>Vieil.</i> | 51. — <i>leucoptera</i> , <i>Linn.</i> |
| 38. — <i>Fernandina</i> , <i>Vig.</i> (Cuba only). | 52. — <i>minuta</i> , <i>Linn.</i> |
| 39. — <i>superciliaris</i> , <i>Temm.</i> (Cuba). | 53. — <i>sylvestris</i> ? |
| 40. <i>Cuculus vetula</i> , <i>Linn.</i> | 54. — <i>martinica</i> , <i>Linn.</i> |
| 41. — <i>pluvialis</i> , <i>Gm.</i> | 55. — <i>Zenaida</i> , <i>Buon.</i> |
| 42. <i>Certhia flaveola</i> , <i>Linn.</i> | 56. — <i>cyanoccephala</i> , <i>Linn.</i> (Cuba only). |
| 43. — <i>maculata</i> , <i>Wils.</i> | 57. { <i>Numida meleagris</i> , <i>Linn.</i> |
| 44. <i>Cynanthus polytmus</i> , <i>Linn.</i> | — <i>maculipennis</i> , <i>Sw.</i> |
| 45. — <i>minimus</i> , <i>Linn.</i> | 58. <i>Tanagra gularis</i> . |
| 46. <i>Lampornis mango</i> , <i>Linn.</i> | 59. <i>Sitta jamaicensis</i> (not of Sloane or Browne). |
| 47. <i>Columba Caribbæa</i> , <i>Gmel.</i> | 60. <i>Pipillo maculata</i> , <i>Sw.</i> |
| 48. — <i>inornata</i> , <i>Vig.</i> | |

Note.—Many of the above species have not been referred to modern genera on account of several of them being proposed from data so different that it is difficult for a Transatlantic naturalist to select from such eminent authorities as Vieillot, Swainson, Buonaparte, Cuvier or Temminck. When no authority is given, the nomenclature is that of Wilson.

Water Birds.

The following species, with one or two exceptions, seem equally distributed over the United States, Mexico, Jamaica and Terra Firma, so that no division of them will be necessary.

ARDEIDÆ.

Ardea virescens.
 — *ludoviciana.*
 — *cærulea.*
 — *abba.*
 — *exilis.*
 — *candidissima.*
 — *herodias.*
Nycticorax violacea.
 — *Gardenii.*
Botaurus minor.
Platalea ajuga.
Phœnicopterus ruber (Amer.).

TANTALIDÆ.

Ibis rubra.
 — *alba.*
Tantalus loculator.

SCOLOPACIDÆ.

Scolopax gallinago (Amer.).

Scolopax grisea.

— *minor.*
Totanus macularius.
 — *chloropygius.*
 — *flavipes.*
 — *semipalmata.*
Tringa rufescens.
 — *pectoralis.*
 — *minutella.*
 — *pusilla.*
Numenius longirostris.

CHARADRIADÆ.

Charadrius semipalmatus.
 — *vociferus.*
 — *apricarius.*
 — *monnellus.*
 — *pluvialis.*
 — *melodus.*
Squatarola cinerea.
Himantopus melanopterus.

RALLIDÆ.

Rallus minutus.
 — jamaicensis.
 — virginianus.
 Aramus scolopaceus.

Parra Jacana.
 — variabilis.
 Gallinula Galatea.
 — Martinica.

NATATORES.

ANATINÆ.

Dendronessa sponsa.
 Boschas fera.
 — crecca (Amer.).
 — discors.
 — discors occident.
 Dafila caudacuta.
 Chauliodus streperus.
 Anas clypeata.
 Mareca americana.
 Anas ? fistularis.

Podiceps cristatus.
 — auritus.

PELECANIDÆ.

Pelecanus fuscus.
 Tachypetes aquilus.
 Phaëton æthereus.

LARIDÆ.

Larus atricilla.
 — argentatus.
 — parasiticus.
 Sterna fuliginosa.
 — minuta.
 — stolidia.
 Thalassidroma pelagica.
 — Wilsonii.

FULIGULINÆ.

Fuligula marita.
 — cristata.
 Anas ? jamaicensis.
 Anas ? spinosa.
 Anas ? dominica.

Note.—I have been guilty of discourtesy to some authors by excluding species from the catalogue which are assigned to Jamaica in their works. I have never discovered them, and I must plead that they may still reward my more successful researches. I have not included St. Domingo (Haiti) in my list, as I have no local knowledge of its ornithology, but from the writings of Vieillot it appears more extensive than either Cuba or Jamaica.

Regarding an ornithological province as a portion of the earth containing in it a greater number of land species peculiar to, and not extending beyond it, than of those common to it and adjoining countries, it may be asked—Are the greater Antilles a distinct ornithological province, or merely a portion of that of Mexico or the United States ?

There are however curious differences in the birds of the several West Indian islands. Trinidad has a diversified ornithology, apparently identical with the South American continent. Many of the pigeons, woodpeckers and humming-birds differ. The *Columba carolin.* extends to Cuba and Haiti, but not to Jamaica. The *Col. Caribbæa* appears confined to the latter. The *Lampornis mango* of Jamaica is represented in Haiti by *gramineus*. There appears in the former island only one woodpecker, the *Picus carolin.*, while in Cuba

and Haiti there are several. Geological researches may assist the explanation of these anomalies. There are three mountain-ranges of different date and vegetation. One of these constitutes the Bahamas, north side of Haiti and Cuba: the Cibao range, covered with pathless forests of *Pinus occidentalis*, re-appears in Cuba and the Isle of Pines, terminating in Mexico. The precipitous mountains of the Grand Anse are formed of limestone, which is prolonged through Jamaica into Yucatan, covered with its peculiar production, *Myrtus Pimenta*, equally remarkable for its individual beauty and fragrance.

“Pauca hæc vidimus operum DEI.”

April 13, 1847.

William Yarrell, Esq., Vice-President, in the Chair.

The following communications were read:—

1. SOME OBSERVATIONS ON THE SKULL OF *PHASCOLOMYS VOMBATUS*.
By J. E. GRAY, ESQ., F.R.S. ETC. ETC.

In the collection at the British Museum there are three skulls which agree with Prof. Owen's character of *Phascolomys Vombatus*, as described in vol. iii. of the Zool. Soc. Transactions: that is to say, they have only slightly curved upper cutting teeth, short noses, &c. Two were sent from Van Diemen's Land by Mr. Ronald Gunn, and one from N. S. Wales was presented by my late friend and admirable botanist, Mr. Allan Cunningham, F.L.S.

The specimens from Van Diemen's Land are much smaller (the largest being 6 in. 4 lines long), and more depressed and truncated behind, and have two moderate-sized oblong holes in the hinder part of the palate. The specimen from N. S. Wales is one inch longer, and has two large triangular holes in the end of the palate. All the three specimens differ in the size of the teeth, and especially in the size and relative position of the upper cutting teeth.

1. The least of the Van Diemen's Land skulls has rather small grinders, but the upper cutting teeth are small, compressed, rather diverging from each other, forming an angle in front and only touching each other at the truncated inner edge. The crowns of these teeth are 5 lines long and $2\frac{1}{2}$ lines wide. The lower cutting teeth are small with a roundish crown.

2. The other Van Diemen's Land skull, which is rather larger in all its measurements, has larger grinders. The cutting teeth are much larger: the upper large, oblong, diverging from each other, forming together a segment of a circle in front, and only touching

each other by the inner edge. The crowns of these teeth are $5\frac{1}{2}$ lines long and $3\frac{1}{2}$ lines wide.

3. The skull from N. S. Wales has the teeth very like those of the small Van Diemen's Land specimen, but rather larger: the upper cutting teeth are considerably larger and rather more triangular, but in the same angular position.

It is desirable that more of these skulls should be compared, to determine whether these are only individual variations, or that there are more than one species confounded under this name. I am inclined to the former view; but if this is the case, it shows that the skulls and teeth do not present such good specific characters as many zoologists are willing to believe.

2. DESCRIPTION DE QUINZE ESPÈCES DE TROCHILIDÉES DU CABINET DE M. LÖDDIGES. PAR JULES BOURCIER.

TROCH. MIRABILIS (Lodd. MSS. inéd.).

Troch. admirable. Mâle adulte: bec noir, droit, cylindrique, emplumé sur ses bases; tête allongée, couverte d'une plaque ovaliforme, bleu-clair brillant; nuque, scapulaire, dos et sur-caudale vert-gris doré: paré sur la gorge et devant du cou, d'un hausse-col, vert très brillant à reflete bleu au centre et terminé en pointe sur la poitrine, continué par une bande de plumes noires maculées de reflete d'or, se prolongeant jusqu'à la région anale, garnie de plumes, gris-verdâtre; côtés du cou et les flancs revêtus de plumes blanches; ailes peu courbées, gris violacé; queue de quatre rectrices, les autres non apparentes sont rudimentaires, les externes formées par de longues baguettes, en demi-cercle, non barbulées dans leur plus grande partie et terminées par de longues barbules arrondies en forme de raquette, noir-violacé, ses rectrices se croisant à leur base et vers leur centre représentant deux C suropposés, les médiaires étroites allongées en pointe, gris-vert-pâle luisant; pattes noires, dénudées.

Long. du bec 20 mm.; ailes 40 mm.; rect. ext. environ 160 mm.; raquettes 22 mm.; médiaires 60 mm.

Hab. Chachapoyas au Pérou, rapporté en 1836 par M. Matthews.

Rem.—Cet oiseau par ses rectrices externes se rapproche du *Ornism. Platurus*, *Underwoodii* de Lesson; par ses médiaires du l'*Ornism. chrysolopha*; par sa tête du *Troch. cristatus* de Gmel.; et par la parure de sa gorge à l'*Ornism. scutatus*, Less.

TROCH. AQUILA (Lodd. MSS. inéd.).

Troch. Aigle. Mâle adulte: bec très arqué, décrivant le tiers d'un cercle; mandibules robustes, très dilatées à la base et terminées en pointes; la supérieure noire, arrondie en dessus et cannelée sur les côtés, l'inférieure blanche, également cannelée sur les côtés dépasse en longueur de 4 mm. la supérieure; tête gris-noir; cou, scapulaire, dos et couverture caudale vert-glauc luisant, les plumes sur-caudales légèrement frangées de roux; gorge et toutes les parties inférieures du corps revê-

tues de plumes soyeuses gris-noir, flammées de blanc, sous-caudales grises, blanches à leur centre ; ailes presque droites, à remiges larges, gris-noir ; queue, arrondie en éventail, à rectrices angulaires vert-glauque pâle, blanches à leur extrémité, le blanc plus étendu sur les rectrices externes, diminuant sur chacune d'elles jusqu'aux médiaires où la pointe est marqué de blanc ; pattes très fortes, noires, dénudées.

Long. Bec. 25 et 29 mm. ; ailes 80 mm. ; rect. 55 mm.

Hab. Nouvelle Grenade, les environs de Bogota, rapporté par M. Wallis.

Rem.—Les caractères de cet oiseau sont si différents des autres *Troch.* qu'il y a peu d'espèces avec lesquelles on puisse le rapprocher ; le *Troch. Mazeppa* de Lesson est le plus voisin.

TROCH. MILLERII (Lodd. MSS. inéd.).

Troch. de Miller. Mâle adulte : bec noir, droit, cylindrique, blanc à la base de la mandibule inférieure ; tête ronde ; couverte ainsi que les côtés du cou de plumes soyeuses, vert-frais brillant ; scapulaire, dos et couverture caudale vert doré luisant ; gorge devant du cou, poitrine, abdomen, et sous-caudale blanc lacté, flancs maculés de vert doré ; ailes à remiges moyennement étroites gris violacé ; queue peu fourchue à rectrices étroites, gris-vert pâle tachées transversalement de brun dans leur dernier quart, les médiaires arrondies sans taches ; pattes noires.

Long. Bec 16 mm. ; ailes 50 mm. ; rect. ext. 30 mm. ; médiaires, 26.

Patrie. Le Brésil, Rio Négro, rapporté par M. Natterer.

Rem.—Cet oiseau peut se confondre avec l'*Ornism. brevirostris* de Lesson, mais ce dernier n'a pas le dessus de la tête brillante et la queue diffère de nuance.

TROCH. SCHREIBERSII (Lodd. MSS. inéd.).

Troch. de Schreibers. Mâle adulte : bec noir, fort, légèrement arqué à son extrémité, emplumé à ses bases ; tête allongée, toutes les parties supérieures du corps de la tête aux couvertures caudales vert-doré luisant, la commissure du bec est prolongée d'une bande étroite de plumes fauves ; gorge à plumes noires soyeuses, passant au violet glacé brillant sur le devant du cou ; poitrine écaillée de plumes vertes très brillantes, le reste du dessous du corps vert foncé doré, région anale noire, sous-caudales noires à reflete vert ; ailes falciformes gris-noir ; queue légèrement fourchue à rectrices larges acuminées entièrement noir-bleu, les médiaires plus courtes à reflete vert ; pattes noires un peu emplumées.

Long. Bec 25 mm. ; ailes 70 mm. ; rect. ext. 40 mm. ; suivantes 45 mm. ; médiaires 35 mm.

Patrie. Alto Rio Négro (Brésil), rapporté en 1836 par M. Natterer.

TROCH. MATTHEWSII (Lodd. MSS. inéd.).

Troch. de Matthews. Mâle adulte : bec noir, droit, terminé en

pointe, tête allongée; toute la tête, gorge, et cou revêtus de plumes à base rousse écaillés de vert-olive brillant; scapulaire, dos et couverture caudale vert-bronze, dessous du corps et des ailes roux-cannelle, ainsi que les sous-caudales; ailes presque droites, brun-violacé; queue légèrement fourchue à rectrices larges, arrondies roux-cannelle vif et marginées de vert luisant à leur extrémité, les médiaires entièrement vertes luisantes; pattes blanchâtres peu emplumées.

Long. Bec 17 mm.; ailes 80 mm.; rect. ext. 45 mm.; médiaires 35 mm.

Patrie. Le Pérou; rapporté par M. Matthews.

Rem.—Cet oiseau a beaucoup de ressemblance avec le *Ornism paradisæ* de Boiss. pour la taille et les formes.

TROCH. WATERTONII (Lodd. MSS. inéd.).

Troch. de Waterton. Mâle adulte: bec noir, presque droit, fort, emplumé à sa base; tête allongée, couverte de plumes semi-écailleuses vert doré; scapulaire, petites tectrices et dos bleu-violacé brillant, couverture caudale bleu verdoyant; gorge, devant et côtés du cou épigastre, vert-brillant, abdomen et flancs bleu foncé; sous-caudale noir-bleu; ailes falciformes, noir-bleu; queue très fourchue à rectrices régulièrement étagées, noir-bleu violacé; pattes noires dénudées.

Long. Bec 26 mm.; ailes 55 mm.; rect. ext. 65; médiaires 20 mm.

Hab. Mibiri Creek, à 40 mille de la rivière Essequibo.

Rem.—Cet oiseau se rapproche de la *Meriphilus* de Less., du *nigro-fasciata* de Gould, et du *Colombicus* de B.

TROCH. EVELYNÆ.

Troch. d'Evelyn. Mâle adulte: bec grêle, noir, droit, cylindrique; tête ronde; toutes les parties supérieures du corps vert-brun-doré luisant; gorge et devant du cou, paré de plumes écailleuses, d'un rouge-violet très brillant revêtu sur les côtés du cou et la poitrine de plumes soyeuses blanchâtres; abdomen roux fauve, flancs maculés de vert, sous-caudale blanchâtre; ailes, à remiges étroites, gris-noir-violacé; queue à rectrices étroites, allongées et acuminées, l'externe noire à reflete violet, la suivante noire violet à son extérieure et les barbules intérieures d'un roux orangé vif, la 3^e d'un roux orangé vif ne conserve du noir, que dans la dernière moitié supérieure des barbules externe, la 4^e presque entièrement noire à reflete violet, est roux orangé à sa base externe, les médiaires sont rudimentaires; pattes noires dénudées.

Long. Bec 16 mm.; ailes 38 mm.; rectrice ext. 30 mm., suivantes 35 mm.; les submédiaires 24 mm.

Hab. Nassau, New Providence, rapporté par M. Swainson.

Rem.—Cet oiseau se rapproche par sa taille et ses couleurs à l'*Ornismya Elisa* de Less.

TROCH. JOHANNÆ.

Troch. de Jeanne. Mâle adulte : bec noir, droit, long, comprimé et rétréci en pointe à son extrémité ; tête ronde ; orné sur le front de plumes écailleuses, de violet glacé brillant, tête, cou, scapulaire et dos, vert-bleu cendré luisant ; couverture caudale bleu-cendré ; gorge grise passant au noir soyeux sur le devant du cou et le reste du dessous du corps ; ailes falciforme gris-noir violacé ; queue arrondie à rectrices noires, larges, acuminées, les externes cendrées à leur extrémité ; pattes noires dénudées.

Long. Bec. 35 mm. ; ailes 55 mm. ; rect. ext. 25 mm. ; médiaires 35 mm.

Patrie. Le Pérou ; rapporté par M. Matthews.

Rem.—Cet oiseau a beaucoup de ressemblance avec le *T. Ludovicia* de Bour. et Muls., dont il diffère par la plaque frontale verte chez cette dernière espèce.

TROCH. CONRADII.

Troch. de Conrad. Mâle adulte : bec noir, droit, long emplumé sur ses bases ; tête allongée, front et vertex à plumes écailleuses vertes très brillantes, le corps en dessus et en dessous entièrement d'un beau vert frais brillant à l'exception du devant du cou et de l'épigastre couverte de plumes soyeuses blanc de neige ; région anale garnie de duvete gris ; sous-caudale vert-brillant ; ailes falciformes grisâtres, la première remige roustée sur sa côte extérieure, les rectrices vertes comme le dos ; queue légèrement bifurquée à rectrices larges acuminées, les médiaires vert-brillant comme le corps, les autres rectrices d'un blanc de neige et marginées de vert-brillant dans le dernier quart de leur extrémité ; pattes blanches dénudées.

Long. Bec 35 mm. ; ailes 75 mm. ; rect. ext. 45 mm. ; médiaires 40 mm.

Patrie. Les environs de Caracas.

Rem.—Cet oiseau ressemble au *Troch. torquatus* de Boiss.

TROCH. YARRELLII.

Troch. de Yarrell. Mâle adulte : bec noir, droit, cylindrique ; tête ronde, le dessus du corps entièrement gris à légers reflets de vert-jaune luisant ; gorge et devant du cou orné d'un hausse-col brillant bleu-clair verdoyant, et violacé au centre ; côtés du cou, poitrine et abdomen garnis de plumes blanchâtres, sous-caudales longues et blanches ; ailes à remiges courtes, gris-clair ; queue à rectrices gris-clair, les trois externes très étroites, allongées et courbées en forme de lame de yatagan, les submédiaires plus courtes, angulaires, ainsi que les médiaires arrondies, sont légèrement dorées ; pattes noires dénudées.

Long. Bec. 12 mm. ; ailes 30 mm. ; rect. ext. 36 mm. ; les suivantes 39 mm. ; les submédiaires 26 mm. ; et les médiaires 15 mm.

La femelle. Sauf la parure de la gorge dont elle est privée et sa queue à rectrices étroites grises à leur base, noires à leur centre

et blanche à l'extrémité, le reste du corps est semblable à celui du mâle.

Hab. Montévideo.

Rem.—Cet oiseau a beaucoup de rapport avec l'*Ornism. cora* de Lesson et l'*Ornism. Labrador.* de B.

TROCH. SPENCEI.

Troch. de Spence. Mâle adulte : bec noir, droit, cylindrique ; tête ronde, front orné de plumes écailleuses d'une nuance d'acier-bruni, toutes les parties supérieures du corps sont vert-brun doré ; gorge, devant et côtés du cou, couverte de larges plumes écaillées d'un beau violet-immortelle éclatant bordée en dessous d'une bande blanche lactée ; flancs et abdomen vert-brun brougé ; ailes falciiformes, à remiges larges brun violacé, queue à rectrices égales noires bronzé-rougeâtres en dessus ; pattes noires dénudées.

Long. Bec 20 mm. ; ailes 55 mm. ; queue 35 mm.

Hab. Merida.

Rem.—Cet oiseau ressemble au *Troch. amethysticollis* de D'Orbigny et Lafresnaye, à l'*Ornis. Clarissæ* de Lesson, et du *Troch. strophianus* de Gould.

TROCH. RUCKERI.

Troch. de Rucker. Mâle adulte : bec long, légèrement arqué, dilaté à sa base, mandibule supérieure noire, l'inférieure blanche ; tête, cou, scapulaire, dos, et couverture caudale vert sombre luisant ; de la commissure du bec à la nuque, une bande blanchâtre étroite ; gorge et dessous du corps gris-noir bronzé ; ailes presque droites, brun violacé ; queue arrondie en éventail, les médiales vert-bronzé et blanche à leur extrémité, les autres rectrices d'un blanc lacté sont traversées dans leur dernière moitié d'une bande noir-bleu ; pattes et ongles blanchâtres et dénudées.

Long. Bec 38 mm. ; ailes 60 mm. ; rect. ext. 25 mm. ; médiales 40 mm.

Patrie inconnue.

Rem.—Cet oiseau a du rapport avec le *T. Antonia* de Bour. et Muls., et du *T. ruficollis* de Gmel.

TROCH. DOUBLEDAYI.

Troch. de Doubleday. Mâle adulte : bec droit, dilaté à sa base, blanc, et noir à son extrémité ; tête ronde ; calotte verte, très brillante à reflète azurés ; nuque, scapulaire, dos, couverture caudale vert foncé luisant ; gorge, devant et côtés du cou, épigastre revêtus de plumes écailleuses bleu vif brillant, abdomen moins bleu et vert sur les flancs ; région anale garnie de duvet blanc ; ailes légèrement recourbées gris-noir ; queue cordiforme à rectrices larges et arrondies, noir-bleu, les 4 médiales cendrées à leur extrémité ; pattes noires dénudées.

Long. Bec 20 mm. ; ailes 45 mm. ; rect. ext. 30 mm. ; médiales 24 mm.

Hab...... Présumé de Rio Négro.

Rem.—Cet oiseau a beaucoup de ressemblance avec l'*Ornis. cyanea* de Less.

TROCH. MITCHELLII.

Troch. de Mitchell. Mâle adulte : bec noir, droit, cylindrique, emplumé sur ses bases, toutes les parties supérieures du corps vert-noir légèrement bronzé ; gorge devant et côtés du cou garnis d'un hausse-col brillant violet-immortelle foncé, poitrine blanchâtre, abdomen et flancs gris-noir ; ailes à rémiges étroites gris-noir ; queue très bifurquée à rectrices étroites, allongées et terminées en pointe, gris-noir violacé, les médiaires très courtes et arrondies ; pattes noires dénudées.

Long. Bec 15 mm. ; ailes 33 mm. ; rect. ext. 32 mm. ; médiaires 14 mm.

Patrie. Zimapan.

Rem.—Cet oiseau ressemble par sa taille et ses formes à l'*Ornism. amethystinus* de Less.

TROCH. NORRISII.

Troch. de Norris. Mâle adulte : bec dilaté à la base, presque droit, blanchâtre et noir vers son extrémité ; tête, cou, scapulaire, dos vert doré pâle, couverture caudale gris-vert pâle ; gorge devant et côtés du cou, écaillés de plumes vert-doré brillant, épigastre blanc de neige, abdomen et flancs fauve clair, sous-caudales gris-blanc ; ailes presque droites gris-pâle ; queue à rectrices égales, allongées, acuminées, toutes gris-vert pâle luisant ; pattes blanchâtres dénudées.

Long. Bec 18 mm. ; ailes 55 mm. ; rect. 35 mm.

Patrie. Guayaquil.

Rem.—Cet ois. ressemble par sa taille et ses formes à l'*Ornism. Amagili* de Lesson et au *Troch. corallirostris* de Bourc. et Muls. Cette même espèce existe dans la collection de la Société Zool.

M. Bourcier remarked that he had received permission from Mr. Conrad Loddiges to lay before the Society the preceding description of the species which still remained unique or uncharacterized in the superb collection formed by the late Mr. Loddiges. He was desirous also of acknowledging the kindness and courtesy with which Mr. Loddiges' MSS. notes had been communicated to him ; and of bearing testimony to the value of the ideas of a classification of Trochilidæ which had evidently existed in the mind of that collector, although unfortunately he had never reduced them to writing. The collection of Mr. Loddiges has been renowned among ornithologists for many years ; and there is no doubt that he was the first possessor of almost all the most beautiful and interesting forms existing in this family. The extent and richness of his cabinet cannot be better shown than by the fact of its including, at the present moment, so large a number of species which have hitherto escaped the extraordinary attention of other Trochilidists and their collectors.

In the possession of Mr. Loddiges, Mr. Gould, Mr. Rucker and Mr. Leadbeater, and in the British Museum, M. Bourcier had become acquainted with thirty species not known in the collections of France.

3. DESCRIPTION DE DEUX ESPÈCES NOUVELLES DE TROCHILIDÉES.

PAR JULES BOURCIER.

TROCHILUS CAROLI.

Troch. de Charles. Mâle adulte : bec noir, droit et cylindrique ; tête ronde ; dessus de la tête, scapulaire et dos revêtus de plumes vert sombre légèrement bronzées, passant à un vert plus prononcé sur les couvertures caudales ; gorge et devant du cou, pailletés de plumes grenat brillant ; tache blanche sous l'œil ; parties inférieures du corps gris foncé, lavé de vert ; région anale de duvet blanc à base noire ; sous-caudales blanchâtres, grises à leur centre ; ailes falciformes gris-violacé ; queue fourchue, les quatre médiales étagées, vert-bronzé, les six autres noires à reflete violacés, les laterales à barbules fauve sur le bord externe de leur extrémité ; pattes noires dénudées.

Long. Bec 22 mm. ; ailes 60 mm. ; rect. ext. 55 mm. ; médiales 30 mm.

Rem.—Cet oiseau fait partie de la belle collection de Mr. Edward Wilson.

TROCHILUS GEORGINÆ.

Troch. de Georgina. Mâle adulte : bec noir à base, large, recouverte de plumes ; mandibule supérieure droite, sillonnée, légèrement relevée et déprimée à son extrémité ; mandibule inférieure droite dans sa première moitié et courbée de bas en haut en forme d'âlène dans la seconde ; tête allongée et déprimée, toutes les parties supérieures du corps sont couvertes de plumes soyeuses vert-bronzé luisant ; les parties inférieures du corps gris-vert luisant et fauve sur l'abdomen, région anale garnie de duvet fauve ; ailes droites, brun-violacé ; bordé de roux le long du poignet ; queue à remiges larges et égales noir-bleu, tachées de blanc à leur extrémité, les médiales entièrement vert-bronzé ; pattes noires et dénudées, ongles robustes.

Long. Bec 15 mm. ; ailes 55 mm. ; queue 40 mm.

Patrie. La Nouvelle Grenade (fait partie de la collection de T. B.)

Rem.—Cet ois. a de la ressemblance avec le *Troch. eurypterus* de Loddiges.

4. DESCRIPTION OF A NEW SPECIES OF FULIGULA.

BY A. D. BARTLETT.

FULIGULA FERINOIDES. *Fulig. ferinoides fuligulæ ferinæ similis, sed magnitudine minori, colore saturatiori, alis speculo albo conspicuè notatis, oculis stramineis, trachæ paulò longiore et angustiore, et sterno multo minore, diversâ; emarginationes tamen sterni ejus iis ferinæ sterni magnitudine æquales.*

Paget's Pochard. Adult male : Upper part of head, neck and cheeks reddish chestnut, tinged with purple ; a small triangular spot of white at the commencement of the feathers under the bill ; chin, throat, lower part of neck and breast black, darkest on the breast ; back, scapulars, flank and side-feathers finely freckled with trans-

verse lines of black on a greyish-white ground; greater wing-coverts and primaries greyish-black, the latter darkest at the tips; secondaries white, forming the speculum; tips of the feathers black, edged with white; rump, tail, upper and under tail-coverts brownish black; belly mottled, the tips of the feathers being white, the remaining portion brownish; bill and legs bluish slate; the tip of the former and the webs and *claws* of the latter black; the eyes straw-colour. The young birds differ in having the head, neck and breast of a lighter and brighter chestnut-red (becoming darker as the bird advances to maturity); the under tail-coverts greyish-white.

Entire length, $17\frac{1}{2}$ inches; wing, from carpal joint, $7\frac{3}{4}$; bill, from forehead, $1\frac{3}{4}$; middle toe and claw, $2\frac{1}{2}$ inches.

I have proposed the above specific name for this bird, as it appears more closely allied to our common Pochard than to any other species. I have called it, at Mr. Fisher's suggestion, Paget's Pochard, after the late E. J. Paget, Esq., of Great Yarmouth, a gentleman well-known as a zealous and accomplished naturalist, and one of the authors of the 'Sketch of the Natural History of Great Yarmouth and its Neighbourhood,' near which place the first authenticated British specimen was obtained.

Remarks.—This bird may be readily distinguished from the common Pochard (which it most resembles) by its smaller size, darker colouring, the conspicuous *white speculum* on the wing, and the colour of the eyes. The female is unknown to me, but I presume it will much resemble the female of the Pochard, and will doubtless possess the white speculum on the wings.

The *trachea* of *F. ferinoides* differs from that of *F. ferina* in being rather longer and narrower, the tube being much narrower at the upper part, gradually enlarging towards the middle, where it is largest, and contracting gradually towards the end, which is its smallest part: the labyrinth is smaller in front, but much wider and differently formed on the left side; the enlargement at the bottom of the tympanum is also greater than that of the corresponding part in *F. ferina*: although the sternum is much smaller, the emarginations are quite equal in size to these parts in *ferina*.

With reference to the supposition that these birds are hybrids, I beg to remark, that I have paid some attention to the subject of hybrids, and have compiled a list of the different species of Water Fowl (as far as I have been able to collect) which have produced hybrids. On referring to this list it will be seen that nineteen different kinds are mentioned; five of these are referable to the *Common Goose*, and five of them to the *Common Duck*; the remaining nine kinds are referable to species commonly kept, and which breed freely in a state of captivity. I am unable to find one instance of any species of the genus *Fuligula* (which includes no less than 15 species) having under any circumstances crossed. These birds are most difficult to breed in a state of captivity: I have known several pairs of the Common Pochard (*Fuligula ferina*) kept for years in places well-suited for breeding (where many wild species and one of this genus annually

breed), yet these birds showed no inclination to breed, although they were perfectly healthy, and assumed the breeding dress at the proper season. As these birds have the power of suppressing and checking their desires when not in a perfect state of nature, I cannot imagine or think it probable that they would associate and breed, in a state of nature, with species distinct from themselves, possessing as they do the power of travelling over the globe if necessary to find a mate of its own species. Again, the fact of three specimens having been obtained at distant periods, agreeing in internal as well as external characters, is I think sufficient to prevent any one entertaining such an opinion.

List of Hybrids.

Common Goose.	{ Hooper Swan.
	{ Chinese Goose.
	{ Canada Goose.
	{ Bernacle Goose.
	{ White-fronted Goose.
Egyptian Goose.	{ Chinese Goose.
	{ Spur-winged Goose.
	{ Common Duck.
Canada Goose	{ Chinese Goose.
	{ Bernacle Goose.
Bean Goose	{ Pink-footed Goose.
White-fronted Goose	{ Bernacle Goose.
Common Duck	{ Muscovy Duck.
	{ Shelldrake.
	{ Pintail Duck.
	{ Wigeon.
	{ Egyptian Goose.
Shoveller	{ Garganey Teal.
Pintail	{ Wigeon.

5. NOTES ON SOME RARE BIRDS OF NEW ZEALAND AND AUSTRALIA.
BY MR. F. STRANGE, IN A LETTER TO JOHN GOULD, Esq., F.R.S. ETC.

“STRIGOPS HABROPTILUS, G. R. Gray.—The *Ka-ka-po*, or Night Parrot of the New Zealanders, is an inhabitant of the western side of the Middle island, and like the *Kiwi-kiwi* or *Apteryx* is strictly nocturnal in its habits, and never leaves its retreat during the day; its usual place of resort consists of burrows, formed by itself, beneath the roots of large trees or under immense pieces of rock, whence they cannot, even by the natives, be easily dug out. Its food consists of fern-roots, which it digs up with its bill, and the outer covering of the leaves of flax, which it obtains by drawing the leaves between the mandibles and leaving the flax behind. They are not gregarious, more than two never being found together, except a pair of young ones, which appear to stop with the old birds until they have attained the size of their parents. This is one of the birds the natives set great store by, the head being cut off, strung by the nostrils, and

worn in the ears on their grand feast-days. It is known to the sealers by the name of the Green Bird of New Zealand.

“*APTERYX AUSTRALIS*.—*Kiwi-kiwi* of the New Zealanders. I am told that a second species of *Apteryx* is to be found on the Middle island, that it stands about three feet high; it is called by the sealers the Fireman. Aware, from your figures and description, that the sexes differ considerably in size, I pointed this out to my informant; but he still persisted that there are two species, in confirmation of which opinion he added, that he had taken the eggs of the two birds, and found those of one species to be much larger than those of the other. The larger kind are nearly the size of the Emu's; they are somewhat long in form and blunt at the ends; their colour is a dirty white. They are deposited in a burrow on a nest formed of roots and sticks, and a few of the bird's own feathers.

“*SCYTHROPS NOVÆ HOLLANDIÆ*.—I send you the egg of this species, and also the female bird out of which it was taken, after she had received two shots.”

April 27, 1847.

William Yarrell, Esq., Vice-President, in the Chair.

The following communications were read to the Meeting:—

1. DESCRIPTIONS OF THE EGGS OF SOME OF THE BIRDS OF CHILE.
BY WILLIAM YARRELL, Esq., F.L.S.

From my earliest acquaintance with the eggs of our British Birds, I was led to consider that this department of natural history had not been studied with the attention these beautiful objects deserve; and the examination of collections of eggs made in India, Australia, North America, and more recently in Chile, have served to confirm my first impression.

The history of a plant would be incomplete if it did not include a description of the leaf, the flower, and the fruit, as these appear in succession.

Mr. MacLeay has told us in his ‘*Horæ Entom.*,’ p. 448, that “as the knowledge of the whole life of an insect must make us better acquainted with its nature than a mere description of one of its forms, in the same proportion ought metamorphosis to outweigh every other principle of arrangement.”

Of two naturalists who studied the Lepidoptera of Europe, it has been stated, that “not satisfied with an acquaintance with the insect in its perfect state, they examined it also in the early stages of its

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existence; they compared the various caterpillars with the butterflies which are produced from them, traced with indefatigable industry the plan of nature in these animals, and discovered the resemblance which was invariably preserved in the structure of species related to each other in affinity, in the different stages of their existence."

With these examples in view, I have been induced to consider the egg of a bird as one stage or condition in the life of the animal:

That the colour and markings we find deposited on the external surface of the shell afford indications by which classification may be assisted:

That the eggs of congeneric species will resemble each other in colour and markings, whatever may be the geographical locality in which such species are found.

Mr. Hewitson, in the introduction to his work containing excellent delineations of the eggs of British birds, observes, that "much useful and highly interesting information might be gained towards the classification of birds, by paying some attention to their eggs; and it is gratifying to find, in thus regarding them, that, with the exception of a few instances, were we to take the eggs of our British birds as our only guide, we should arrive at the best and most approved arrangement of the different genera."

I am aware that exceptions and discrepancies may be pointed out. The colour deposited on the egg-shells is an animal matter, dependent on the health of the bird. Fear or confinement acting constitutionally upon the organs of secretion are known to affect this colouring-matter.

The greatest amount of variation is found to occur among the *Laridæ*.

With these preliminary remarks, I proceed to the description of a collection of eggs of some of the birds of Chile, obtained by Mr. Bridges, and exhibited here by Mr. Cuming.

Cathartes Iota of Molina; Chilian name *Ioté*.—The egg of this Vulture measures 2 in. $\frac{8}{10}$ in length, and 1 in. $\frac{9}{10}$ in breadth: the shape is rather peculiar, being broadest at the centre and tapering gradually in both directions, so as to become pointed at both ends. The ground colour is white, slightly tinged with red; blotched with pale red; spotted and speckled with dark brownish red.

Haliaëtus aguia, Temminck; *Aquila* of the Spanish; *Calquin* of the Indians.—The egg is 2 in. $\frac{11}{20}$ in length by 2 in. $\frac{1}{20}$ in breadth; elliptic; white, with a few spots of dark red and numerous spots and speckles of pale red.

Polyborus Brasiliensis, Swainson; Chilian name *Traro* and *Taro*.—The egg of this bird is 2 in. $\frac{4}{10}$ in length by 2 in. in breadth; blotched, spotted and speckled with dark red, on a ground of reddish white. This egg, in its colour and markings, resembles those of our British Osprey.

Milvago pezoporos, Meyen; Chilian name *Tuique*.—The egg measures 1 in. $\frac{8}{10}$ by 1 in. $\frac{4}{10}$; white, tinged with red; blotched, spotted and speckled with dark brownish red.

Strix pratincola, Bonap. ; *Strix flammea* of Wilson ; *Strix Americana* of Audubon. Screech Owl.—The egg is pure white, and measures 1 in. $\frac{17}{20}$ in length and 1 in. $\frac{4}{10}$ in breadth.

Turdus Falklandicus of Quoy and Gaim. ; Chilian name *Torzal*.—This egg closely resembles those of our British Missel Thrush. The ground colour pale bluish white, spotted and speckled with pale red. The length 1 in. $\frac{2}{10}$, the breadth three-quarters of an inch.

Geositta canicularia of Vieillot ; Chilian name *Caminante*.—The egg is pure white, and measures $\frac{9}{10}$ of an inch in length by $\frac{7}{10}$ of an inch in breadth.

Cyanotis omnicolor, Swains. ; Chilian name *Pajaro*.—This small egg measures only $\frac{13}{20}$ of an inch in length by half an inch in breadth ; of a pure and spotless white, but some specimens of the eggs are tinged with pale buff-colour.

Crithagra brevirostris, Gould ; Chilian name *Chirique*.—The egg is white, tinged with green, speckled with brownish red, and measures $\frac{7}{10}$ of an inch in length by half an inch and $\frac{1}{20}$ in breadth.

Fringilla Diuca, Mol. The Chilian name is *Thiuca* or *Diuca*.—The egg of this bird measures 1 inch in length by $\frac{7}{10}$ of an inch in breadth : the ground colour white, tinged with green, more or less mottled all over with two shades of greenish brown.

Phytotoma rara, Mol. Called *Rara* by the natives.—The egg measures 1 inch in length by $\frac{7}{10}$ of an inch in breadth, and is of a delicate bluish green, with a few specks of dark reddish brown at the larger end.

Sturnella Loica, Mol. The Chilian name is *Loica*.—The egg of this bird measures 1 in. $\frac{1}{10}$ in length by $\frac{8}{10}$ of an inch in breadth : the ground colour white, spotted and speckled with pale red, dark brownish red, and purple grey.

Icterus Thilius, Mol. The Chilian name *Thili* or *Trili*.—This egg measures 1 inch in length by $\frac{7}{10}$ of an inch in breadth : the ground colour white, sometimes tinged with buff, with a few spots and streaks of dark reddish brown deposited over the larger end.

Zenaida aurita, Temm. ; Chilian name *Tortola*.—The egg of this species, which is the most common of the *Columbidae* found in Chile, is white, and measures 1 in. $\frac{3}{20}$ in length by $\frac{9}{10}$ of an inch in breadth.

Columbina strepitans, Spix ; *Tortolita cyana* of the Chilians.—The egg of this pretty little species of Dove is also of a pure white, smooth and shining ; the length $\frac{9}{10}$ of an inch, the breadth $\frac{7}{10}$.

Nothura perdicaria, G. R. Gray ; *Perdiz* of the Chilians.—This beautiful egg, of a uniform rich purple-chocolate brown, the surface smooth and polished, measures 1 in. $\frac{9}{10}$ in length and 1 in. $\frac{4}{10}$ in breadth.

Two other unnamed eggs in this collection, of the same character and colour as that of the *Nothura* last-described, and probably belonging to two species of the genus *Tinochorus* found in Chile, may be here referred to ; the larger one 2 in. $\frac{1}{10}$ in length by $1\frac{3}{4}$ in. in

breadth; the other 1 in. $\frac{8}{10}$ in length and $1\frac{1}{4}$ in. in breadth. Elliptic in shape, of a rich and uniform purple-chocolate brown; the surface highly polished.

Another egg in this collection, not named, but apparently belonging to some species of *Tinamou*, may be mentioned on account of its beauty. It measures 1 in. $\frac{3}{10}$ in length, and 1 in. $\frac{1}{20}$ in breadth; the shape is elliptic, and the colour a uniform delicate siskin-green.

Rhea Darwini, Gould, 'Voyage of the Beagle,' Birds, page 123, plate 47.—The egg of this fine species measures $4\frac{3}{4}$ in. in length and $3\frac{1}{2}$ in. in breadth: elliptic in form; the colour whitish, but tinged with very pale asparagus-green. This egg is figured by Dr. Thienemahn in his new work now in course of publication on the incubation of birds in general, part 1. page 4. tab. 2. fig. 2, with the additional name of *Rhea pennata D'Orbignii*.

Scolopax Paraguaia, Vieill. Called by the Chilians *Avecasina* and *Porrotero*.—The egg is $1\frac{3}{4}$ in. long and $1\frac{1}{4}$ in. broad; olive-brown, blotched and spotted with dark reddish brown and pale brown. This egg, in colour and markings, exactly resembles the egg of our most common British Snipe.

Vanellus Chiliensis.—The egg thus marked measures 1 in. $\frac{9}{10}$ in length and 1 in. $\frac{9}{20}$ in breadth: olive-brown, spotted with black and greyish brown; closely resembling the eggs of our British *Vanellus*.

Rallus sanguinolentus, Swains.; Chilian name *Piden*.—This egg is 1 in. $\frac{8}{10}$ long and $1\frac{1}{4}$ in. in breadth: the ground colour white, tinged with red, partially spotted with yellowish red. In its ground colour and markings very similar to the egg of our British *Rallus*.

Gallinula crassirostris, J. E. Gray. Called by the Chilians *Taguita*.—The egg reddish white, spotted with two shades of reddish brown; the length 1 in. $\frac{8}{10}$ by 1 in. $\frac{2}{10}$ in breadth.

Fulica galeata, G. R. Gray.—This egg, closely resembling that of our Common Coot in its colours and markings, measures 2 in. $\frac{1}{10}$ in length, and $1\frac{1}{2}$ in. in breadth: pale brownish white, or stone-colour, speckled over with nutmeg-brown.

Cygnus nigricollis, Gmelin. *Cisne* is the Chilian name for this Black-necked Swan. The egg is near 4 in. in length by $2\frac{1}{2}$ in. in breadth; white, tinged with pale buff.

Rhynchaspis maculatus. The Chilian name of this bird is *Pato Abaston*.—The egg measures 2 in. $\frac{3}{10}$ in length and $1\frac{3}{4}$ in. in breadth; dull, greyish white, tinged with green.

Querquedula cærulata, Eyton. The Chilian name of this little Duck (the *Anas Rafflesii* of Vigors) is *Pato colorado*.—The egg is 2 in. in length and 1 in. $\frac{4}{10}$ in breadth: the colour a uniform pale buffy white.

Anas Bahamensis? Linn., called *Pato Jergon grande* by the Chilians, produces an egg $\frac{1}{20}$ of an inch larger in both its dimensions than the egg of the *Pato colorado* last-described, and of a richer and more decided buff-colour.

Podiceps Chilensis, Garnot. Called by the Chilians *Guala* and

Gulon.—This large species of Grebe produces an egg of 2 in. $\frac{3}{20}$ in length by $1\frac{1}{2}$ in. in breadth, of a dull white, stained with earthy brown.

Podiceps Kalipareus, Quoy and Gaim. The Chilian name *Gualita de la Mar*.—The egg of this Grebe measures 1 in. $\frac{8}{10}$ by $1\frac{1}{4}$ in., of a dull white, some of them more or less stained with dirty brown, depending on the number of days they may have been deposited in the nest.

The egg of a third species of *Podiceps*, bearing the Chilian name *Gargari*, is yet a little smaller than the egg of the *Gualita* last described, measuring only 1 in. $\frac{6}{10}$ in length and 1 in. $\frac{1}{10}$ in breadth; the colour as usual in the eggs of all the Grebes.

2. DESCRIPTION OF A NEW GENUS OF EMYDÆ. BY J. E. GRAY, Esq.,
F.R.S., F.Z.S. ETC.

In the museum of the Zoological Society is a fine specimen of a large freshwater Tortoise, presented by Lieut. Mawe, R.N., who found it in South America in the year 1833.

It is marked by Mr. Fraser "*Emys Mawii*, Bibron, original of M. B.'s description, No. 6899," but I can find no such species described in M. Bibron's work, nor is it an *Emys* as defined by that author.

It differs from all the known Emydæ in being covered with very thin membranaceous scales, and in having a broad sternum with a series of four large distinctly defined plates placed over the sterno-costal suture. The gular plates are very small, and there are no axillary or inguinal plates.

My genus *Platystemon* has the same kind of sterno-costal plates, but quite a differently formed shell. The head is very large and the tail elongate.

DERMATEMYS, n. g.

Ch. gen.—*Testa* ovalis, gibba, acarinata, in lateribus rotundata, marginē posteriore expanso, paulò reflexo, scutellis membranaceis tenuissimis defenso. *Scutellæ marginales* posteriores latæ. *Sternum* planum antè rotundatum postè emarginatum. *Squamæ gulares* parvæ, triangulares, testæ superiori per longum symphysin affixæ. *Sutura sterno-costalis* squamis magnis quatuor defensa, postremis duabus maximis squamis, minima anteriore. *Scutellæ* axillares et inguinales nullæ. *Testa* vix ad aperturam contracta.

Head —? Toes webbed? Claws —?

Shell oblong, convex, not keeled; sides rounded, hinder edge expanded, slightly reflexed, covered with very thin membranaceous shields. The hinder marginal shields broad. Sternum flat, rounded in front, notched behind: the gular plates small, triangular, united to the upper shell by a long symphysis; the sterno-costal suture covered with four large distinctly defined plates; the anterior smaller, the two hinder largest. The axillary and inguinal plates none. The cavity of the shell is scarcely contracted at the opening.

Hab. South America.

Dermatemys Mawii, n. s.—Vertebral plates: 1st broad, seven-sided; 2nd, 3rd and 4th longer than broad. Colour pale brown; the upper surface covered with small, close, irregular depressions of a darker brown colour; the shields pale, nearly transparent, very brittle when dry; the under surface uniform pale yellowish white, with slightly sunken grooves.

Length of upper shell 17 inches; width 11 inches; length of sternum $12\frac{1}{2}$ inches.

Remarks.—The specimen appears to be not quite full-grown. It has much of the external appearance of *Phrynops Geoffroyii*, and the general thinness of the scales of *Chelydidae*; but there is no appearance of any scar on the inner surface of the sternum for the attachment of the pelvis; and though the gular scale is worn and nearly obliterated, yet it is sufficiently distinct to show that it has no inter-gular plate.

3. DESCRIPTIONS OF NEW CRUSTACEA FROM THE EASTERN SEAS. BY ADAM WHITE, F.L.S.

Family INACHIDÆ.

Genus DOCLEA, Leach.

DOCLEA CALCITRAPA, White, n. s., List of Specimens of Crust. in Brit. Mus. p. 4.

Carapace with seventeen large spines on the back and sides, and sixteen smaller tubercles on the upper surface; seven of the large spines down the middle of carapace, six of them erect, the sixth springing from the base of the much-elongated horizontal terminal spine; the last of the spines of the side much longer than the other three. The whole surface seems to have been covered with hairs. The four hind pairs of legs are very long and slender.

Breadth of carapace 1 inch 4 lines; length 1 inch 10 lines.

A species distinguishable at first sight from the four species hitherto described, of all of which there are specimens in the Museum Collection.

Hab. Philippine Islands (Zebu): Brit. Museum. From Mr. Cumming's collection.

Family MAIADÆ.

HYASTENUS, White.

Carapace rather oblong, rounded on the sides behind, before and behind the eyes straight; a slight transverse groove in upper orbit; front with two horns as long as the carapace, at first parallel and then diverging and directed slightly downwards; outer antennæ with all the joints cylindrical; the insertion of the basal joint concealed by the frontal horn.

Fore-legs slender; second pair of legs the longest and very slender; terminal joint with the edge spined.

A genus allied to *Hyas* and *Chorinus*, the only species of which was long ago figured in the large work of Seba.

HYASTENUS SEBÆ, White, List of Specimens of Crust. in Brit. Mus.
p. 6.

Upper surface somewhat roughish, and covered with a delicate down.

Cancer araneus cornutus alter, Seba, Thes. iii. 45. t. 18. f. 12.

Hab. Philippine Islands. From the collection of Mr. Cuming.

Also found by Capt. Sir Edward Belcher, C.B.

Family PARTHENOPIDÆ.

CERATOCARCINUS, Adams & White.

Form of the carapace somewhat pentagonal; the sides, over the insertion of the first pair of legs, produced into a large spine directed slightly forwards; front wide and prominent, projecting on each side in the form of conical horns, widely separate from each other. Eyes rather small, peduncles short, the eye fitting into a groove on the side of the beak. Outer antennæ considerably developed, the terminal appendages at least half the length of the whole antennæ, and projecting beyond the horns of the beak.

First pair of legs much-elongated; the sides nearly parallel; the wrist somewhat pear-shaped, without spines on the inside, the edges of the pincers meeting and serrated. The second pair of legs longer, more slender than the last three pairs; the tarsal joint slender and elongated; fourth and fifth pairs of equal length; the fifth pair, as in *Eumedonus*, placed so high as nearly to conceal the insertion of the fourth pair; the tarsal joints of these legs thick; the claw at the end translucent. Abdomen of male as in *Eumedonus*; the female unknown.

This genus is closely allied to *Eumedonus* of Prof. Milne Edwards (Crust. i. 349), and, like it, comes from the Eastern Seas.

CERATOCARCINUS LONGIMANUS, n. s., List of Specimens of Crust. in Brit. Mus. p. 125.

Two pointed transverse tubercles, tufted with hair at the end, on the back of the carapace, behind the eyes; the first pair of legs covered with minute warts and with several deep longitudinal grooves; the pincers blackish brown, except at the base.

Hab. North coast of Borneo (Balambangan): British Museum. Presented by Capt. Sir Edward Belcher, C.B., R.N.

When alive, according to the observations of Arthur Adams, Esq., who found it, the colour of this species is blood-red, with five light bands across the carapace.

GONATONOTUS, Adams & White.

Carapace pentagonal, depressed, the lateral angles very sharp; the front very wide, lamelliform, dilated, rounded, slightly notched at the end. Eyes large, prominent; peduncles short, inserted in a deepish notch on the side. Outer antennæ with the terminal appendage elongated.

First pair of legs thickish; the wrist rounded and spined on the inside, the claws serrated on the edge; third and fourth pairs of

legs rather longer than the second and fifth; the tarsal joints of the second, third, fourth and fifth pairs of equal size and thickness; the fifth pair of legs inserted above the fourth pair.

Abdomen of female seven-jointed; three or four of the basal joints seen from above. Male unknown.

This genus is allied to *Eumedonus*.

GONATONOTUS PENTAGONUS, n. s., List of Specimens of Crust. in Brit. Mus. p. 125.

Carapace above closely verrucose, the warts depressed; a strongish ridge across the back, extending from one lateral angle to the other, with two tubercles in the middle; the front grooved down the middle; the centre of the back with two longitudinal impressions; terminal joint of abdomen in female verrucose.

First pair of legs verrucose; the pincers grooved.

Mr. Adams found this species on the coast of Borneo. When alive it is of a brick-red colour, with the chelæ crimson; under surface rufous.

LAMBRUS LAMELLIGER, White, List of Specimens of Crust. in Brit. Mus. p. 12.

Front depressed, flat, thin; upper surface of carapace with three largish protuberances behind, one in the middle and one on each side; carapace longer than wide; sides about the middle crenated; fore-legs very long.

Breadth of carapace $4\frac{1}{2}$ lines; length $5\frac{3}{4}$ lines.

Hab. Philippine Islands. From Mr. Cuming's collection.

LAMBRUS TURRIGER, White, List of Specimens of Crust. in Brit. Mus. p. 12.

Carapace longer than wide; front small, depressed and considerably grooved in the middle, the side with a small tooth on each side; back of carapace with four elevated spines, thickened and blunt at the end, the first about midway between front and back; behind it another much higher, and one on each side of this; on the hind margin of carapace, in the middle, are two spines.

Arms very long, verrucose; legs very slender and smooth.

Breadth of carapace about 4 lines; length about $4\frac{1}{2}$ lines.

Hab. Philippine Islands: British Museum. From Mr. Cuming's collection.

Also brought by Capt. Sir Edward Belcher, C.B., R.N.

4. ON SOME UNDESCRIBED SPECIES OF LEPIDOPTERA IN THE SOCIETY'S COLLECTION. BY EDWARD DOUBLEDAY, ESQ., F.L.S. &c. &c.

Genus PIERIS.

PIERIS PHAOLA. *Pi. alis omnibus supra albis, anticarum margine externo late nigro, posticarum punctis sex nigris notato, subtus pallide flavescentibus, basi flavis, marginibus externis nigro-punctatis.* Exp. alar. $2\frac{1}{4}$ unc. vel 57 millim.

Hab. Fernando Po.

Above, all the wings white, very slightly tinted with yellowish at the base; anterior wings with the costa narrowly black; the outer margin with a broad black border, dentate internally, broadest at the apex. Posterior wings with a series of seven round black dots on the margin.

Below, pale cream-colour or white, slightly tinged with yellow; palest on the disc of the anterior wings; the base and costa of the anterior and the costa of posterior wings yellow; apex and outer margin of anterior wings with a series of nine black dots, of which the first to the sixth are minute, the seventh larger and double, the eighth and ninth larger than any except the seventh. Posterior wings with a marginal series of seven black dots: the first, second and third very minute, fourth, fifth and sixth progressively larger, seventh small.

Head, thorax and abdomen black, sprinkled especially below with white scales. Antennæ black, annulated with white.

In the collection of the Zoological Society.

This species is closely allied to *P. Eudoxia*, but differs in wanting the bright orange patch at the base of the anterior wings, and in the form and number of the dots on the posterior wings, as well as in the colour of the under surface, which is pure white with a silvery lustre in the males of that species.

PIERIS MATUTA. *Pi. alis omnibus supra albis, apice anticarum nigro; margine posticarum nigro punctato; subtus albidis basi anticarum costaque posticarum luteis.* Exp. alar. $2\frac{1}{2}$ unc. vel 63 millim.

Hab. Fernando Po.

Wings above white, the anterior with the apex and outer margin as far as the third median nervule irregularly black; a black spot on the margin above the first and second median nervule. Posterior wings with a slender cuneiform dot at the extremity of each nervule. Below, anterior white, the costa itself very narrowly black, the base marked with a broad luteous patch. Posterior wings very pale cream-colour, with slight pearly reflections, the costa at the base luteous. Extremities of the nervules slightly fuscous. Head and thorax black, clothed with white hairs. Abdomen black, covered with white scales. Antennæ black, annulated with white.

Genus ATERICA.

ATERICA BARCE. *At. alis omnibus supra æneo-nigris, marginibus externis fuscis, subtus ochraceis, fascia communi transversa, plaga discoidali anticarum, strigis undatis maculisque brunneis.* Exp. alar. $2\frac{1}{4}$ unc. vel 55 mill.

Hab. Sierra Leone.

Above, all the wings æneo-fuscous, with green and bluish reflections; the outer margin of the anterior broadly fuscous at the apex, less so at the anal angle; a slight fuscous cloud at the end of the cell and another much larger beyond it. Posterior wings with the costal and abdominal margins and the outer angle broadly fuscous; outer margin, except at the angle, narrowly so. Abdominal fold

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thickly lined with long hairs. Cilia fuscous, spotted with whitish. Below ochrey brown, the anterior wings with a minute dark brown spot in the cell close to the base; a large, irregular, subtriangular, dark brown patch before the middle, divided in the cell by a spot of the ground colour. Beyond the middle is a much-waved abbreviated brown striga, and a similar one extends along the whole outer margin. Between these two strigæ is a transverse band of a vinous brown, commencing at the apex and extending to the middle of the inner margin, narrow at its commencement, broad at its termination, where it occupies nearly the whole space from the middle of the wings to the anal angle, and is divided by a faint ochrey cloud. Posterior wings with a broad reddish brown band across the middle, divided by a pale ochreous spot near the costa, beyond which is a paler brown cloud. Near the margin is a much-waved brown striga, and the outer angle is brown. Near the base is a somewhat reniform brown spot, paler in the centre, and below it a ring of the same colours.

Head, thorax and abdomen fuscous above, rufescent below. Antennæ very long, black.

In the collection of the Zoological Society.

Genus CHARAXES.

CHARAXES PHRAORTES. *Ch. alis omnibus supra fulvis, nigro limbatis maculatisque, anticis serie marginali punctorum, posticis lunularum fulvarum; subtus saturatè fulvis, fascia media alteraque submarginali argenteis, maculis plurimis, vittisque numerosis nigris argenteo cinctis.* Exp. alar. $4\frac{1}{2}$ unc. vel 116 mill.

Hab. Madagascar.

Above, all the wings fulvous, with a broad black border externally, broadest on the posterior wings, marked on the outer margin of the anterior with a series of fulvous dots between the nervules, and on the posterior just within the margin with a series of lunules also placed between the nervules; this border is irregularly dentate within on the anterior wings, and divided near the apex by a row of four fulvous dots; not dentate internally on the posterior wings, but less defined, being slightly shaded into the fulvous. The base both of the anterior and posterior wings is slightly shaded with fuscous, and the anterior are marked, in the cell, with two rounded spots, an elongate subquadrate one on the disco-cellular nervules, a subquadrate one immediately beyond the cell above the third median nervule, a longer one immediately below this, and another broadly lunate between the first and second median nervule, all black. Between these spots and the black margin is a short submacular band extending from the costa to the second disco-cellular nervule. Outer margin of anterior wings sinuate, dentate, of posterior dentate, caudate.

Below, the anterior wings are bright deep fulvous at the base and along the costa beyond the middle of the wings; marked as above with black spots and a short marginal black band, but all these mark-

ings are broadly margined with silvery white; and there are, in addition to the spots of the upper surface, a small round spot in the cell close to the base, and an oval one above the first median nervule near its origin, both black with a silvery border. Beyond the middle is a silvery white irregular band, narrowed on the costa, where it is marked by four black dots, the third and fourth indistinct, broadest on the inner margin, where it becomes of a pearly hue. Between this band and the margin the prevailing colour is a pale fulvous. A band composed of a series of silvery grey lunules commences on the costa and terminates on the submedian nervure. These lunules have their points directed inwards, and are margined internally with black, those nearest the costa less broadly than the others. The terminations of the nervules are bordered with silvery grey, and beyond this with black, and the cilia are spotted with the same colours. The posterior wings are bright deep fulvous, paler towards the outer margin, traversed beyond the middle by a flexuous silvery band. At the base, before the precostal nervule, is an oval black spot bordered with silvery white; beyond this is a macular band composed of four black transverse vittæ bordered with silvery white, extending from the costa to the abdominal fold; the inner vitta transverse only at its origin, extending down the abdominal to unite with a similar fold which traverses the cell and descends obliquely between the first median nervule and the submedian nervure. The inner margin of the silvery band is marked with a series of black spots and vittæ, and the abdominal fold is beautifully marked with alternate silvery, bright fulvous and black vittæ. Near the outer margin is a broad silvery white band sprinkled with grey and fulvous scales, and clouded with these colours, bordered externally with black. On the outer margin itself is a narrow black border, margined internally with white. Cilia, except on the tail, white.

Head fulvous. Thorax fulvous above, streaked below with fulvous and white. Legs white.

In the collection of the Zoological Society.

This beautiful insect is closely allied to *Ch. Castor*, but may at once be known by the silvery markings below.

5. DESCRIPTION OF *STRIGOPS HABROPTILUS*. BY G. R. GRAY, Esq., F.L.S. &c.

With reference to the interesting particulars about *Strigops habroptilus*, communicated by Mr. Gould (*suprà* p. 50), I am induced to remark that this singular bird was first noticed under the native name of Kakapo in the Appendix to Dr. Dieffenbach's Travels in New Zealand, where it was suggested to belong to the family of *Cuculidae*, from the supposed similarity of the few feathers brought by that gentleman to those of the genus *Centropus*. This idea was at once dispelled by the arrival of the perfect specimen now in the British Museum, from which a figure was made by my friend Mr. Mitchell, and published as pl. 105 in the 'Genera of Birds.' The singular appearance of the feathers of the head, and especially their arrange-

ment about the bill, gives it much of the expression of the family *Strigidae*. It was this resemblance that induced me to give it the above generic name. Dr. Dieffenbach states that its native name implies that its habits are nocturnal: the natives catch the bird by torchlight. He further informs us that it chiefly inhabits the South island of New Zealand, but is very rare even in that locality, which is in some degree the result of the destruction it meets with from the attack of cats and dogs, to which its habit of frequenting the lower branches only of trees the more readily exposes it.

As I have never published a specific character, I subjoin the following:—

STRIGOPS HABROPTILUS, G. R. Gray. *Str. olivaceo-viridis viridigriseo tinctus, plumis singulis strigâ medianâ flavâ nigro-marginatâ extus irregulariter transversè nigro-fasciatis, tectricum majorum remigum secundariorumque pogoniis exterioribus caudâque totâ pallidè umbrinis transversè luteo-fasciatis fasciis irregulariter nigro-marginatis; subtùs pallidior luteo tinctus plumis singulis strigâ medianâ luteâ piceo-marginatâ extus irregulariter transversè piceo fasciatis; fronte, genis, regionibus auricularibus plumisque ad rostri basin prominentibus pallidè umbrinis medio luteo-notatis; rostro albo, pedibus plumbeis.*

Upper surface sap-green, with a verdigris tinge on the wings; each feather marked in the middle with yellow, which is margined on the sides with black, from which spring irregular transverse bands of the same colour; the outer webs of the greater wing-coverts, quills, secondaries and the entire tail, brownish buff, irregularly banded transversely with black; between every alternate set lemon-yellow; the inner webs of quills and secondaries black, more or less transversely banded with lemon-yellow. Under surface pale greenish yellow, tinged with lemon-yellow, more or less marked along the shaft with pale yellow, which is narrowly margined with brownish black; some of the feathers have transverse bands of the same colour.

The top of the head brownish black, margined outerly with sap-green, tinged in some places with verdigris, and marked in the middle with pale yellow; the front, cheeks, ear-coverts and the projecting feathers of the face pale umber, marked in the middle with yellowish white. Bill white; feet plumbeous black.

Length, 2 feet 4 inches; bill, 1 inch 8 lines; wings, $11\frac{1}{2}$ inches; tail, $9\frac{1}{4}$ inches; tarsi, $1\frac{3}{4}$ inch.

May 11, 1847.

William Spence, Esq., F.R.S., in the Chair.

The following paper was communicated to the Meeting:—

ON THE GENERA OF THE FAMILY CHITONIDÆ. BY J. E. GRAY,
Esq., F.R.S., F.Z.S. ETC.

This family now contains so many species, offering such varied modifications of form and structure, that it becomes necessary to separate it into several genera, for the purpose of more accurately determining the species and showing their relations to each other.

Most authors have regarded the family as a single genus, and even M. De Blainville, who formed the family into a class under the name of *Polyplakiphora*, so regarded them. He forms of this class and his *Nematopodes* or Barnacles a subtype of the animal kingdom, which he called *Malentozoaria* or *Molluscarticulata*; but there is no sufficient character to separate the Chitons from the other Mollusca, and the *Nematopodes* are now known to be *Crustacea*, so that this division or subtype of the animal kingdom has been erased from the system by most succeeding authors.

Dr. Leach in his MSS. proposed to divide this family into genera, according to the form of the appendages which cover the upper surface of the mantle; and Risso, who was in constant correspondence with Dr. Leach, has in his work published two of Dr. Leach's genera. Mr. Guilding has formed some genera on the same principles in the Zoological Journal, and I have added two others in the Synopsis of the British Museum for 1841.

I may remark that these appendages of the mantle form exceeding good characters for the more minute division of the groups, but the scales so gradually pass into spines or tubercles on the one side, and on the other they so gradually diminish in thickness to furfuraceous scales, which are easily deciduous that it is difficult to define when they are quite absent; therefore they do not afford characters of sufficient importance to use them as Leach, Risso and Guilding have done, for the primary divisions of the family.

Lamarck divided the family into two genera, *Chiton* and *Chitonellus*, but he left in the former genus several species which are more naturally allied to the latter.

M. De Blainville in 1825 published a monograph of the family, under the article 'OSCARRION' in the Dict. Sci. Nat. xxxvi., in which he introduced some new characters for the division of the species into sections. He observes: "Les organes sur lesquels nous appellerons successivement l'attention pour le distinction des espèces sont les suivants:—

"1. L'existence ou l'absence des paires de pinceau de soies dis-

posés bien régulièrement de chaque côte du limbe, qu'il soit revêtu ou non d'écailles, d'épines, ou même de poils.

"2. La disposition des branches commençant plus ou moins en arrière et se terminant plus ou moins en avant.

"3. La forme de valves de la coquille, considérée spécialement dans l'existence plus ou moins marqué des aires latérales.

"4. La grandeur proportionnelle de ces valves et leur degré d'occlusion.

"5. La forme des lames d'insertion et le nombre de leur échancrures ou dents.

"6. Enfin la disposition des couleurs de la coquille."—*D. S. N.* xxxvi. 536.

Certainly this was a great improvement to what had been previously done, but unfortunately M. De Blainville appears to have had the opportunity of observing only a limited number of species, and has placed the others in the sections to which, from their external appearance, they appeared to belong, though on examination they have not the characters assigned to the division in which they were placed: thus *Chiton amiculatus*, p. 546, is said to have the front and hinder valves lobed and pectinated; *C. niger*, p. 541, the teeth of insertion pectinated; *C. echinatus*, p. 550, the anterior and posterior valve toothed; and *C. gigas*, the lobes not pectinated.

From repeated examination and comparison I am inclined to consider the following as the best characters for the distinction of the genera and species, arranged according to their permanence and importance.—

1. The presence or absence of the pores, furnished with a bundle of spicula on each side of the mantle.

2. The comparative length and position of the gills.

3. The form and modification of the plate of insertion of the valves, especially of the posterior valve.

4. The size and form of the exposed part of the valve, and the kind of sculpture on its surface.

5. The absence or presence of appendages on the mantle, and the form, sculpture on the surface, disposition, and equality or inequality of size of these appendages.

6. The colour of the valves and appendages of the mantle.

It has been objected, that the character derived from the form of the plates of insertion can only be seen by the destruction of the specimens, as they are generally kept in the cabinets: this is not always the case, for they can generally be seen from the under-side or through the substance of the mantle; but when this is not the case, the form of the plates of insertion can be easily discovered by carefully paring away the under part of the mantle, so as to show part of the edge of the valve without any injury to the specimen. And it should be recollected too, that the separate valves are the only part of the molluscous animals which are usually kept in cabinets.

The number of lobes into which the edge of the margin of insertion is divided may be also easily seen by the porous lines which are to be observed on the inner surface of the valves, diverging from the

apex to the margin, each of these lines going to the bottom of the notch which separates the lobes on the inner processes of insertion.

Various authors, as Spengler, Chemnitz, De Blainville, Sowerby, Barnes and Reeves, have described and figured many species of the genus.

SYNOPSIS OF THE GENERA.

1. *Mantle simple, without any pores or tuft of spines on the sides.*
- A. *The plate of insertion of the anterior and posterior valve divided into several lobes, and of the central valves into two lobes.*
 - a. *The valves exposed, broad, with regular, equal, well-defined margin for insertion, divided into lobes more or less denticulated. The hinder valve with the apex superior, subcentral.*
 1. CHITON. The posterior valve entire; margin covered with regularly-disposed imbricate scales.
 2. TONICIA. Posterior valve entire; margin naked.
 3. ACANTHOPLEURA. Posterior valve entire; margin spinose, spinulose or bristly.
 4. SCHIZOCHITON. Posterior valve with a deep notch on its central hinder margin; mantle slit behind.
 - b. *The valves exposed, broad; the hinder valve with a slightly raised, smooth or slightly crenated plate of insertion (not divided into lobes on the sides), and with the apex subterminal.*
 5. COREPHIUM. The hinder valve with a rather raised apex, and the plate of insertion crenulated, with one small central slit.
 6. PLAXIPHORA. The hinder valve with a produced posterior apex, and the plate of insertion entire, smooth, rounded; valves thin; mantle with tufts of bristles.
 7. ONITHOCHITON. The hinder valve with a produced terminal apex; plate of insertion entire, rounded; valves thick; mantle covered with spines, bristles, or chaff-like scales.
 8. ENOPLOCHITON. The hinder valve with a produced terminal apex; plate of insertion entire, rounded; valves thick; mantle covered with oblong, unequal, elongated, oblong scales.
 - B. *The plate of insertion of all the valves with only a single notch on each side. The valves more or less covered; the hinder valve with expanded plates of insertion (as in the central valves), with only a single notch on each side, and a concave sinuosity below.*
 9. MOPALIA. Valves, exposed part broad, transverse; plates of insertion moderate; mantle spinulose; front edge sometimes expanded.
 10. KATHARINA. Valves, exposed part small, cordate, as long as broad; mantle smooth.
 11. CRYPTOCHITON. Valves entirely hidden; mantle covered with tufts of spicula.

II. *Mantle with a series of pores (each furnished with a tuft of spines) on each side. The plates of insertion of all the valves with only a single notch on each side, which is sometimes rudimentary.*

12. *CRYPTOCONCHUS*. Exposed part of valves very small, linear, much longer than broad; mantle smooth.

13. *AMICULA*. Exposed part of valves small, subcordate, as broad as long; mantle bristly.

14. *ACANTHOCHITES*. Exposed part of valves moderate, broad, cordate, as long as broad; mantle spinulose.

15. *CHITONELLUS*. Exposed part of valves linear-lanceolate, elongate; body vermiform; mantle spinulose.

1. *CHITON*, Linn. (part), *Guilding*, Z. J. v. 27; *Swainson*; *Gray*, *Syn. Lepidopleurus*, "*Leach MSS.*," *Risso*, *Eur. Merid.* 267. *Chiton*, sect. A. 1. *Blainv.* *Lepas spec.*, *Adanson*. *Corephium*, *Brown*. *Lophurus*, *Poli*. *Gymnoplax*, *Gray*.

* *Scales of the margin moderate, smooth, polished; valves thickish.*

Ch. striatus, *Barnes*. *Ch. olivaceus*, *Frembly*, *Sow. C. Ill.* f. 3, 41. *Chiloe*.

Ch. Cumingii, *Frembly*, *Sow. C. Ill.* f. 32, 51. *Chili*.

Ch. albolineatus, *Sow. C. Ill.* f. 39. *Mexico*.

Ch. squamosus, *Linn*. *Ch. bistriatus*, *Wood*. *Ch. obscurus*, *Sow. West Indies*.

Ch. sulcatus, *Wood*, *Sow. C. Ill.* f. 12.

Ch. granosus, *Frembly*. *Chili*.

Ch. Barnesii, *Gray*. *Coquimbo*.

Ch. glaucus, *Gray*, *Spic. Zool.* = *Ch. viridis*, *Quoy*.

Ch. granulosus, *Frembly*. *Conception*.

Ch. Siculus, *Gray*. *Ch. Polii*, *Desh.* *Sicily*.

Ch. lyratus, *Sow. C. Ill.* f. 126.

Ch. foveolatus, *Sow. C. Ill.* f. 60.

Ch. excavatus, *Gray*, *Sow. C. Ill.* f. 131.

Ch. fasciatus, *Wood*, *Sow. C. Ill.* f. 153.

Ch. australis, *Sow. C. Ill.* f. 46.

Ch. Stokesii, *Brod.*, *Sow. C. Ill.* f. 24.

Ch. virgulatus, *Sow. C. Ill.* f. 132.

Ch. patulus, *Sow. C. Ill.* f. 134.

Ch. marmoratus, *Gmelin*, *Sow. C. Ill.* f. 148. *West Indies*.

Ch. evanidus, *Sow. C. Ill.* f. 139.

Ch. articulatus, *Sow. C. Ill.* f. 18. *California*.

Ch. laevigatus, *Sow. C. Ill.* f. 18*. *California*.

Ch. Goodallii, *Sow. C. Ill.* f. 50. *Galapagos*.

** *Scales of the mantle small, smooth, polished.*

Ch. Bowenii, *King*, *Sow. C. Ill.* f. 37. *Magellan Str.*

*** *Scales of the margin transversely grooved; valve rounded, not keeled, thin.*

This section forms a very natural group.

Ch. *textilis*, Gray, *Spic. Zool.* = Ch. *longicymba*, Blainv., Quoy.
Ch. *Indicus*, Sow. C. Ill. f. 55. Ch. *Solea*, Sow. C. Ill. f. 61. Cape of Good Hope.
Ch. *Magdaliensis*, Hinds.

**** *Scales of the margin lanceolate, elongate, erect, closely pressed.*

Ch. *lævis*, Mont. = Ch. *corallinus*, Risso.

2. TONICIA, Gray, *Syn.* Chiton, Risso, E. M. 267.

* *Valves broad, transverse.*

T. *atrata*. Ch. *atratus*, Sow. C. Illust. f. 57, 58. Falkland Islands.
T. *elegans*. Ch. *elegans*, Frembly, Sow. C. Illust. f. 73, 74. Ch. *Chiloensis*, Sow. Ch. *lineolatus*, Frembly. Ch. *graniferus*, Sow. Ch. *Sparius*, Sow. Conception Bay.

T. *rubra*. Ch. *ruber*, Linn. Ch. *marmoreus*, O. Fab. Ch. *latus*, Lowe. Ch. *fulminatus*, Couth.

T. *fulva*. Ch. *fulvus*, Wood, Sow. C. Ill. f. 53. Cadiz.

T. *lineata*. Ch. *lineatus*, Wood, Sow. C. Ill. f. 77.

T. *Swainsonii*, Sow. C. Ill. f. 5. Peru.

T. *cerasina*.

T. *lævigata*. Ch. *lævigatus*, Flem.

T. *lyrata*.

T. *Grayii*. Ch. *Grayii*, Sow. C. Illust. f. 8—16. Peru.

T. *castanea*. Ch. *castaneus*, Wood, Sow. C. Illust. f. 114, 115, 116. Cape of Good Hope.

T. *fastigiata*. Ch. *fastigiatus*, Gray, Sow. C. Illust. f. 11. California.

** *Valves moderate, subcordate, rounded, and far apart on the sides; lobes of insertion wide; mantle broad.*

T. *disjuncta*. Ch. *disjunctus*, Frembly, Zool. Journ. t. 77. f. 5, forms the passage to the Chitons, which have only a small part of the valves exposed.

3. ACANTHOPLEURA, Guild. Z. J. v. 27; Gray, *Syn.*

Canthapleura, Swains.

This genus gradually passes to *Onithochiton*.

* *The plate of insertion of the hinder valve well-developed, regular; valves thin; lateral area distinct; margin bristly.*

A. *Peruviana*. Ch. *Peruvianus*, Lam., Sow. C. Ill. f. 44. Peru.

A. *bicolor*. Ch. *bicolor*, Adams. West Indies.

A. *Hennahi*. Ch. *Hennahi*, Gray, Sow. C. Ill. f. 1 & 33.

A. *Watsonii*. Ch. *Watsonii*, Sow. C. Ill. f. 81, 82, 130 = Ch. *castaneus*, Quoy.

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** *The plate of insertion of the hinder valve narrow, rather irregular.*

† *Margin bristly; lateral area distinct.*

A. nobilis, Gray. New Zealand.

†† *Margin spinose or spinulose; lateral area indistinct.*

A. picea. Ch. *piceus*, Sow. *C. Ill.* f. 147. West Indies.

A. spinigera. Ch. *spinigerus*, Sow. *Conch. Ill.* f. 68. Peru.

A. Owenii, Gray. West coast of Africa.

A. spinosa. Ch. *spinosus*, Brug., Sow. *C. Illust.* f. 151. Australia.

A. brevispinosa. Ch. *brevispinosus*, Sow. *C. Illust.* f. 136. Island of Johanna.

A. magnifica. Ch. *magnificus*, Gray, Sow. *C. Illust.* f. 52.

††† *Margin smooth?; lateral area very distinct.*

A. ? gigas. Ch. *gigas*, Gmel. Cape of Good Hope.

A. ? truncata. Philippines.

4. SCHIZOCHITON.

Valves elongate, subcordate, narrow; lateral area short, distinctly defined; the hinder valves large, with a subposterior superior apex and a deep notch on its hinder lower edges, and the plate of insertion small, with a few oblique notches, scarcely pectinated. Mantle broad, covered above with small chaff-like scales, deeply notched behind.

Schizochiton incisus. *Chiton incisus*, Sow. Philippines.

5. COREPHIUM.

Valves broad; wing of insertion of the anterior valve lobed and pectinated; the hinder valve oblong, with a subcentral, subposterior, not produced apex; the edge of insertion distinct, not lobed on the sides, with a single nick behind, and slightly denticulated; mantle spinose.

C. echinatus. *Chiton echinatus*, Barnes. *C. tuberculiferus*, Sow. *Ch. spiniferus*, Frembl.; Sow. *C. Illust.* f. 47, young.

6. PLAXIPHORA.

P. Carmichaelis. *Chiton Carmichaelis*, Gray, *Spic. Zool.* Ch. *albidus*, Blainv. 547. Ch. *ruripilosus*, Blainv. 547. Ch. *costatus*, Blainv. 547. Ch. *biramosus*, Quoy, *Voy. Astrol.* t. 74. f. 12, 16. Ch. *setiger*, King, *Z. J.* v. 338; Sow. *Conch. Ill.* f. 17. Ch. *Fremblii*, Brod. *P. Z. S.* 1832, 28; Sow. *Conch. Ill.* f. 2. Ch. *setosus*, Sow., *Beechey Voy.* Terra del Fuego.

See also *Ch. setosus*, Sow. *C. Ill.* f. 19?

7. ONITHOCHITON.

O. Gaimardi. *Chiton Gaimardi*, Blainv. 546.

O. hirtosus. *Chiton hirtosus*, Blainv. 546.

O. undulatus. Ch. *undulatus*. Van Diemen's Land.

8. ENOPLOCHITON.

E. niger. Ch. *niger*, *Barnes*. Ch. *Coquimbensis*, *Frembly*. Coquimbo.

The valves become very much eroded.

9. MOPALIA.

Valves broad, transverse, depressed; margin of insertion moderate; the hinder valve with a rounded lobe on the hinder edge; mantle moderately broad, bristly above, narrow behind.

* *Margin moderately wide in front.*

M. Hindsii. Ch. *Hindsii*. West coast of America.

M. Simpsonii. Ch. *Simpsonii*, *Gray*. Brit. Mus.

** *Margin very wide in front.*

M. Blainvillii. Ch. *Blainvillii*, *Sow. C. Ill.* f. 6. Inner Lobos Island.

10. KATHARINA.

K. tunicata. Chiton *tunicatus*, *Wood, Conch.* ii. t. 2. f. 1; *Cat.* t. 1. f. 10. Wood's specimen is now in the British Museum.

K. Douglasiæ. Ch. *tunicatus*, *Sow. C. Illust.* f. 152. California.

11. CRYPTOCHITON.

The gill only occupies the hinder part of the sides.

C. amiculatus. Ch. *amiculatus*, *Pallas, Nov. Comm. Petrop.* ii. 241. t. 7. f. 26, 30; *Sow. Tank. Cat.* (spec. Brit. Mus.); *Wood, Cat.* t. 1. f. 12, inner side of shell; *Sow. Conch. Illust.* f. 80, half-grown. Chiton *Sitkensis*, *Reeve's Conch. Icon.* f. 55, adult. Kurile Islands.

12. CRYPTOCONCHUS, "*Blainv.*," *Swainson*; *Gray, Syn.*

Body oblong, rather convex; back flattish or concave in the centre, with the tuft of spines on the upper part of the sides of the back. The gills extend about half the length of the sides.

Cryptoconchus porosus, "*Blainv.*," *Burrows, Elem. Conch.* 190 (1815), spec. Brit. Mus. Chiton *porosus*, *Burrows, E. C.* t. 28; *Wood, Cat.* t. 1. f. 39. Ch. *Leachii*, *Blainv. D. S. N.* 554, spec. Brit. Mus. Ch. *monticularis*, *Quoy, Voy. Astrol.* t. 73. f. 30, 34, 36, and lower fig. 7; *Sow. Conch. Illust.* f. 129, valves. New Zealand.

13. AMICULA, *Gray, Syn.* 1840.

Body ovate, convex; back convex; mantle bristly.

Amicula vestita. Chiton *vestitus*, *Sow. Zool. Journ.* iv. 368; *Sow. Conch. Illust.* f. 128. Ch. *Emersonii*, *Couthoy*. Atlantic Ocean.

14. ACANTHOCHITES, *Leach, B.M.*; *Gray, Syn.*

Acanthochites, "*Leach.*" *Acanthochitus*, *Risso. Phakellopleura, Guild., Swainson.* Chitonellus (part.), *Guild.* *Acanthochiton*, *Herrm.*

Body oblong, elongate, rather depressed; mantle spinulose; tuft

of spines generally large; gill extending about two-thirds the length of the sides.

M. De Blainville says, the valves of this genus are always without any trace of lateral area (*D. S. N.* xxxvi. 537), but this must have arisen from his only having examined worn specimens.

A. fascicularis. Ch. fasc., *Linn.* *C. echinites, Blainv., Sow. Conch. Ill.* f. 87—93.

A. Garnoti. Ch. Garnoti, *Blainv. D. S. N.* 552?; *Quoy, Voy. Astrol.* t. 73. f. 9, 14. *Asc. Zelandica, Quoy, Voy. Astrol.* t. 73. f. 5.

A. Hookeri, Gray, Dieffenbach, 262.

A. polychetus. Ch. polychetus, *Blainv.* 553.

A. roseus. Ch. roseus, *Blainv.* 553.

A. Lesueurii. Ch. Lesueurii, *Blainv.* 553.

A. scaber. Ch. scaber, *Blainv.* 553.

A. violaceus. Ch. violaceus, *Quoy, Voy. Astrol.* 73. f. 13, 16, 17, 20; not *Sow. Ill.* f. 133.

A. hastatus. Ch. hastatus, *Sow. C. Ill.* f. 127.

A. hirundiniformis. Ch. hirundiniformis, *Sow. C. Ill.* f. 148.

A. strigatus. *Chitonellus latus, Guild. Z. Journ.* v. 28. *Chitonellus strigatus, Sow. C. Ill.*

15. CHITONELLUS, *Lam.*

Chitonella, Desh. *Cryptoconchus, "Blainv.," Burrows.* *Cryptoplax, Blainv.* *Chitoniscus, Herrm.*

Body elongate, compressed, convex above; mantle covered with crowded spines; the exposed part of the front valves oblong, square, broad, often worn; of the hinder ones narrow, lanceolate; the plates of insertion large, produced in front, and scarcely notched on either side. The gills occupy the hinder third of the sides.

M. De Blainville inserts Lamarck's species of *Chitonelli* with the spiny Chitons in section D., and in section E. he redescribes them, from specimens in spirits in the British Museum.

Chitonellus lævis, Lam. *Chiton vermiformis, Blainv. D. S. N.* xxxvi. 553. *Oscab. fascie, Quoy, Voy. Astrol.* t. 73. f. 21, 29. *Cryptoconchus larvæformis, "Blainv.," Burrows, Elem. Conch.* 190. t. 28. f. 2, 4; *Wood, Cat.* t. 1. f. 40. *Philippines.*

Chitonellus striatus, Lam.; Sow. Conch. Illust. f. 62? *Oscab. oculæ, Quoy, Voy. Astrol.* t. 73. f. 37, 38. *Australia.*

The fossil Chitons of the older strata described by Munster, more lately by Ryckholt, *Bull. Acad. Brux.* 1845, xii. 36. t. 1—4, appear to belong to a peculiar genus, which may be called *Gryphochiton*, most nearly allied to *Chitonellus*.

I have described some peculiarities in the development, disposition and structure of the valves of the Chitons in a paper which will be read at the Royal Society on the 16th of June next.

May 25, 1847.

Harpur Gamble, Esq., M.D., in the Chair.

The following communications were made to the Meeting:—

1. NOTE ON THE EARLY GENERATIVE POWER OF THE GOAT. BY JOHN DAVY, M.D., F.R.S., INSPECTOR-GENERAL OF ARMY HOSPITALS. (COMMUNICATED BY GEO. GULLIVER, F.R.S.)

In the young salmon, the par, we have the remarkable example, now well-authenticated, of the precocious development of the testes with functional activity. What I have witnessed in the young male goat in this island (Barbadoes) as regards its generative power, is hardly, it appears to me, less remarkable. I shall briefly notice the few circumstances which have come to my knowledge illustrating it; such as I can state with certainty as facts.

On the 2nd of May, 1846, a goat which belongs to me gave birth to two kids, a male and a female. When less than a month old, the former exhibited strongly the sexual propensity. When about five weeks old, the penis was protruded in his attempts to copulate. When four months old the mother was in heat, and was then covered and impregnated by her offspring. Five months after, viz. on the 2nd of February, 1847, she gave birth to four kids—three females, one male, all of the usual size and vigorous. On the 10th of February I had the male kid castrated: each testis was about the size of a French bean. A little transparent fluid was obtained from the vas deferens, which under the microscope, viewed with a high power, exhibited some granules, a few fine fibres, and one that had the appearance of a pretty well-formed spermatozoon. The fluid procured from the incised substance of the testis contained many blood-corpuscles, some dark granules and a few small spermatozoa; these were best seen after having been dried on the glass support.

The young female received the male shortly after the mother, but was not then impregnated.

It is said here that the goat breeds at six months old. It is also said that both male and female are two years in attaining their full size.

The goat of Barbadoes appears to resemble in every respect the common goat of Europe, from whence it is supposed to have been originally brought.

The precocity of the young male, as I have described it, and of the effect of which in its generative power there can be no doubt, as the female had access to no other male, is here not considered extraordinary. Whether the same function at so early an age is exercised in a cooler climate, I am ignorant. Should it be found to be so exercised, it may perhaps be considered a provision of nature to secure the preservation of the species, endangered by the localities

the animal in its wild state inhabits amongst precipitous rocks, subject to the attacks of birds and beasts of prey. In accordance with this idea I may remark, that the young pair of kids when five weeks old, when they began to eat grass freely, kept constantly together, and were more frequently absent from than with the mother. The colostrum and the milk of the goat, I may add, containing an unusual proportion of nutritive matter, as indicated by their specific gravity, may also be considered in accordance with this idea. The colostrum first drawn, I have found of the high specific gravity 1088; it coagulated at about 170° . The milk drawn the following day was of the specific gravity 1041; it formed a soft coagulum at about 182° , and a firm one at about 190° . The milk drawn two days later was of specific gravity 10343. After this it underwent very little change; some drawn a week after was of specific gravity 10333, and some drawn three weeks later was of the same specific gravity.

Barbadoes, April 15th, 1847.

2. DESCRIPTIONS OF SOME NEW GENERA AND SPECIES OF ASTER- IADÆ. BY JOHN EDWARD GRAY, ESQ., F.R.S. ETC.

In the 'Annals and Magazine of Natural History' for November 1840 I published a monograph of the species of this group then known to me, and divided them into five families and several genera; since that time the British Museum has received numerous specimens further illustrative of those which we then possessed, and many other specimens, several of which are the types of new genera. Some of these I shall proceed to describe in the following communication, intending on a future occasion to send the remainder.

I may remark, that for several years before the publication of that paper, I had been engaged in the study of these animals, with the intention of publishing an illustrated monograph of the order. The preparation of the plates has occupied many years, but I hope it is now in the course of fulfilment.

In the same year in which I published my paper, Professors J. Müller and D. Troschel read at the Berlin Academy a paper on the same subject, and in 1842 they published a 4to work, with the description of various species.

M. Müller has there reduced the number of genera to eighteen, and for these has most unnecessarily changed the generic names, much to the confusion of the science. I do not know why the *Stellonia* of Forbes is not to be used for *Asterias glacialis* and its allies. If the generic name of *Asterias* is to be erased from the list, I do not see in what respect *Asterocanthion* is preferable to either of these names, or why he rejects Link's name of *Pentaceros* for *Oreaster* (he says Cuvier has used *Pentaceros* for a genus of fish, but I do not find this name in any of Cuvier's works; and if it had been so used, Link has the priority over Cuvier), or why *Astrogonium* is preferable to *Goniaster*, or *Asteropsis* to *Gymnasteria*.

The Star-fish have generally been described as having no vent. Colonel Sabine, in figuring *Asterias polaris*, represented a projecting

tube near the middle of the back, and Professor Müller in his 'System' uses the presence or absence of this tube, which he regards as a vent, as a character to separate the class into two divisions; but I think his table of genera shows that this division can scarcely be considered as natural, for he has been obliged to separate species of *Astropecten* from their allies, and to place them, on this single character, in another division of the family. Secondly, it is very difficult to observe the presence or absence of this part, especially in *Astropecten*, on account of the *parilli*, and some species, which are said to be without it, may have it; for it is to be observed, that Müller and Troschel place the genus in which Sabine first observed the vent, in the family characterized as not having one.

I must consider their work as a retrograde movement, after the publication of my paper, which they quote; for though they might not adopt the genera, yet it cannot but be allowed, that what I have considered as genera are natural groups; and it would have facilitated the making out of the species they have described, if they had used them as sections; they have done so in a few instances (thus after the publication of their paper they have divided the genus *Goniaster* into two, adopting my sections as their genera; but as in the case of *Asterias*, because they have divided it, they blot the names from the system); thus their first section of *Ophidiaster* is the same as my genus, and their second is my genus *Linkia*, and the second section of *Asterocanthion* appears to be my *Tonia*.

It has always appeared to me, that the great advantage of dividing the species into small groups (let us call them genera or sections, as we may) is, that it enables one more accurately to determine and neatly describe and distinguish the species, and prevents the necessity in each description of repeating what has been given as the character of the group, as is the case in the system of Star-fish.

Lastly, I suspect that had M. Müller had the opportunity of examining and comparing the number of specimens of this genus to be found in English collections, he would have come to the same conclusion as I have done with regard to the distinctness of several species which in the work above referred to he has regarded as mere synonyma of some well-known species. At the same time it is remarkable that it should not occur to M. Müller, that when the specimens on which a certain number of species have been established are contained in a single collection, and divided into minute groups, and arranged side by side, it is not so easy to make mistakes in this particular as when the materials are to be collected from various scattered museums; as the differences and the similarities are then more easily to be seen, and any errors which may have been made, more easily discovered.

Thus I am convinced, if he had seen the series of specimens of *Asterias Helianthus* and *Cumingii*, and *A. multiradiata*, which have passed through my hands, and the selection of them in the Museum collection, it is quite impossible that he could have confounded them into a single species. The same may be observed with regard to *Linkia Typus*, *L. Brownii*, *L. bifasciatus* and *L. unifasciatus*; with

Asterina gibbosa and *A. Burtonii*; with *Pentaceros grandis*, *P. gibbus* and *P. reticulatus*; with *P. turritus* and *P. Franklinii*, &c. &c.

CULCITA, Agassiz.

This genus chiefly differs from *Randasia* and *Pentaceros* in having no upper series of marginal ossicules. It agrees with *Randasia* in the back being nearly flat.

CULCITA SCHMIDELIANA.

A. Schmideliana, Retz. Dis.; *Schmidel's Naturf.* xvi. t. 1. good. *A. discoidea*, Lam.

Body subcircular, flat above when dry (very convex subglobose when alive). The back coriaceous, without any apparent reticulations, covered with scattered, small, conical spines. The oral surface rather convex (when dry), closely and minutely granular, and with larger conical tubercles; those near the ambulacra and oral angles much the largest and ovate.

Inhab. — ?

There are distinct indications of the lower marginal ossicules in this species, but they and the ossicules of the oral surface are not sufficiently large and close to force the dry specimen to assume the pentangular form of the following species.

CULCITA PENTANGULARIS.

Body pentangular; back flat when dry, convex beneath, minutely and closely granulated; back with obscure reticulations, the reticulations armed with small conical tubercles; the interspaces closely and minutely porous. The oral surface protected with distinct well-defined ossicules, defining the lower edge of the margin, covered with close and minute granules and larger round-topped tubercles, those near the ambulacra and the oral angles being largest and highest.

Inhab. Reef of Oomaga.

This species is very distinct from the former, and forms the passage to the genus *Randasia*, but there is a series of concave, minutely porous spaces in place of the upper marginal plates.

RANDASIA, Gray.

Body pentagonal, depressed, minutely granular; back nearly flat, minutely granular, reticulated; reticulations rather tubercular, interspaces sunken (when dry) and covered with very minute close perforations. Dorsal tubercles roundish, single, subcentral. Margins furnished with an upper and lower series of oblong ossicules, the upper one narrower internally, with a central series of tubercles, the lower ones oblong, close together and convex. The oral surface protected by close, regular, squarish, convex ossicules, covered with short crowded granules. The ambulacral spines in rounded groups; the series of tubercles nearest the ambulacra larger, crowded, and placed in groups of three or five, and those in the oral angles largest and flat-topped.

This genus differs from *Pentaceros* in the back being flat, elevated,

and not angular; it is in several respects intermediate between *Culcita* and *Pentaceros*.

RANDASIA GRANULATA, n. s.

Body five-sided; back minutely granular, with roundish convex subconical tubercles in the reticulations; the marginal plates fourteen on each side, the upper ones with a central series of tubercles.

Inhab. Reefs of Attagor, Torres Straits.

There are two specimens of this species in the British Museum, one in a very bad state.

RANDASIA SPINULOSA, n. s.

Body five-sided; back and upper marginal plates covered with numerous small, conical, acute spines, without any larger tubercles; the upper marginal plates indistinct.

Inhab. —?

This species is very like the former in shape, size and appearance, but is very easily known from it by the numerous mobile acute spines with which the back and upper part of the margin are covered, appearing to take the places of the small granulations, and by the absence of the tubercles on the elevated ribs of the back.

ASTERODISCUS.

Body pentagonal, coriaceous, depressed, covered with numerous close, flat-topped, unequal, small tubercles; back convex; dorsal wart roundish, subcentral; arms short, rounded, with a pair of large convex kidney-shaped ossicles on each side of the tip above. Margin simple, rounded, beneath concave; ambulacra with a series of short linear spines, placed in groups of four or five, each group on a separate ossicle, and with two series of larger, blunt, club-shaped spines on the outside of the ambulacral spines. The young specimens have indistinct inferior marginal ossicles.

ASTERODISCUS ELEGANS.

Pale brown when dry; tubercles of the back unequal, the larger ones truncated, those nearest the mouth on the underside larger, club-shaped, rather crowded.

Inhab. —? Brit. Mus.

PENTACEROS GRANULOSUS.

Five-rayed; rays as long as the diameter of the disc, rounded at the tip. Back rather convex. Ossicles convex, rounded, all covered with close rounded granules, the two or three central ones on the top of each ossicle being larger, those on the middle of the back largest and subtubercular. The marginal ossicles convex, rounded.

Inhab. Western Australia.

Young? Arms more slender, and the lower marginal ossicles near the tip of the arm each with a group of two or three spines, the one nearest the tip largest.

The dorsal surface of this species is furnished with abundance of *pedicellaria*, one arising from each hole between the ossicles.

STELLASTER INCEI.

Purplish, minutely granular; back with scattered, conical, convex tubercles, those down the centre of the arm largest. The lower marginal plates are flattish.

Inhab. North Australia.

This species is very like *Stellaster Childreni*, Gray, Ann. and Mag. Nat. Hist. 1840, 278; Müller, Aster. 62. 128. t. 4. f. 3; *Asterias equestris*, Retzius, Diss. 12; but it is purplish when dry; the back is tubercular; the whole surface is minutely granular; while the Japanese species is always white, the back smooth, and the granules of the surface are so minute and thin that they are very easily eroded, and the lower marginal plates are more convex and the central ones much larger than the others.

STELLASTER BELCHERI.

Back convex, with two or three large conical tubercles on the line extending to the centre of the arms. Arms slender, tapering, rather longer than the diameter of the disc.

Inhab. Amboina or New Guinea.

This species is intermediate between *S. Childreni* and *S. Incei*, having the white colour and the slender arms of the former, and the convex back and tubercles of the latter, but the tubercles are larger and fewer, and the arms are more slender, having only a single series of plates between the marginal ones.

There are two specimens in spirits and one dry, in the British Museum collection.

CALLIDERMA.

Body flat, five-sided, rays rather elongated; attenuated end only formed of the marginal plates. Ossicles all minutely granulated; the dorsal ossicles flat-tipped, six-sided, some with a larger, globular, central tubercle-like granule. The marginal ossicles broad, gradually becoming smaller near the tip, short-edged, minutely granular, those of the upper and lower series alternating; the edge of the upper ones with some indistinct spines on the margin, the lower ones with scattered mobile spines on the oral surface. The ossicles of the oral surface three-, four-, or six-sided, granular, with one (rarely two) central, compressed, acute, mobile spines. The ambulacral spines very small, close, fourteen or sixteen on each ossicle, forming a rounder group, with two or three series of large, scattered, mobile, acute spines on the outer side.

This genus resembles *Stellaster*, but differs from it in the oral surface being furnished with scattered spines.

There is a fossil species very like the one here described found in the chalk, and figured in Mr. Dixon's work on the fossils of Worthing, which I propose to call *Calliderma Dixonii*. There are probably several other fossil species from the same locality; they have been referred to the genus *Tosia*, but the ossicles are granular and the oral surface spinose.

CALLIDERMA EMMA.

Flat, pentangular, the sides concave, the arms elongated, produced, tapering to a fine point, about two-thirds the length of the diameter of the disc. The dorsal ossicules six-sided, regular, flat-topped, covered with minute roundish granules; the central granules of the central ossicules and those down the centre of the arms larger, globular, tubercular-like. The margin sharp-edged, concave in the centre; the ossicules of the upper and lower series alternating, minutely granular, with one or two larger subspinose granules on the middle of the upper margin. Marginal ossicules about fifty on each surface on each side, the lower series with scattered, acute, compressed spines on their oral side.

The ossicules of the oral side four- or six-sided, rather irregular, minutely granular, each armed with a central, compressed, acute, mobile spine.

Inhab. — ?

This species most nearly resembles a fossil found in the chalk, which has hitherto been referred to the genus *Tosia*, and figured in Mr. Dixon's forthcoming work on the fossils of Worthing.

I have named this fine species in compliment to my daughter Mrs. J. P. G. Smith, who before her marriage commenced a series of plates to illustrate a monograph of this genus.

ANTHENEAE.

This genus may be divided into two sections, one having a very large two-lipped pore on each ossiculus of the oral surface; the back netted and chaffy, as in *A. Chinensis* and the following new species.

ANTHENEAE TUBERCULOSA.

Back obscurely netted, rather chaffy, with scattered, long, flat-backed tubercles. Marginal ossicules with some moderate granules, the upper ossicules with one or more large flat-topped tubercles on their upper part.

Inhab. Port Essington.

This species is very like *Anthenea Chinensis*, Gray (*Asterias pentagonula*, Lam. ?), but differs from it in being more convex and netted and more distinctly tubercular, and in the upper marginal tessera being armed with tubercles.

Like the Chinese species, all the ossicules, both marginal and discal, of the oral surface, are furnished with large, elongated, two-lipped pores.

The second section contains the following species, which have one or more small two-lipped pores on some of the ossicules of the oral surface; the back subtubercular, and the ossicules all covered with large roundish granules.

ANTHENEAE GRANULIFERA.

Both surfaces covered with small roundish granules, the back with

rather convex ossicules; the arms as long as the diameter of the body; back with one or two scattered tubercles.

Var. Back with a blunt tubercle on the centre of each of the ossicules of the middle of the back.

Inhab. — ?

This species is easily known from the former by the smaller granules on the surface, the length of the arms, and the small size of the two-lipped pores; those of the dorsal surface are very minute.

HOSIA SPINULOSA.

Body flat, pentagonal, sides concave; arms not half the length of the diameter of the body; ossicules large, subequal, six-sided, very minutely granular. Marginal ossicules $\frac{1}{10}$ on each side, convex, deeply separated from each other with a series of two or three small, acute, spine-like tubercles in the centre of each. The ossicules of the oral surface flat, minutely granular, with small two-lipped pores.

Inhab. Indian Ocean; Philippines.

This species nearly resembles the shape of *Tosia australis*, but is at once known from that species by the granular ossicules, the spines on the margin, and the two-lipped pores beneath; it differs from *Hosia flavescens* in its being five-sided instead of five-armed, and in having no spines on the middle of the back.

ASTROGONIUM (restricted).

Body pentangular, flat above and below. Back and oral surface protected by triangular ossicules, each covered with numerous erect, cylindrical, truncated tubercles or granules, those of the oral surface longest. Margin strengthened with regular, oblong, four-sided ossicules, covered with small regular granules, except on the most convex part of their centres, those of the upper and lower series opposite each other. Dorsal wart single. Ambulacra with cylindrical truncated spines, in groups of four on each ossiculus of equal size, not forming a rounded group, and with a series of similar, rather larger spines on their side, and a series of small ossicules with terminal granules on their outer sides. Bilabiate slits are on either surface.

Messrs. Müller and Troschel have proposed a genus under this name, which I have here restricted to smaller limits, to more accurately distinguish the species. I have described all we have in the Museum.

A. *Body flat, five-sided; granules short; ossicules flat-topped, not tubercled.*

ASTROGONIUM GRANULARIS. *Asterias granularis*, Retz. Dis.; Müller, Zool. Dan. t. 92. f. 1.

Pentagonal, sides rather concave. Back bright crimson; oral surface yellowish; marginal ossicules oblong, $\frac{1}{14}$ on each side, rather convex, covered, except at the most convex part of the upper and lower surface, with very minute granules. Dorsal ossicules hexagonal, flat-topped, with short flat-topped granules; ossicules of oral surface similar, but granules longer.

Inhab. North Sea. British Museum.

This species is very like *Tosia australis*, but is at once known from it by the granules covering the greater part of the surface of the marginal ossicules.

ASTROGONIUM MILIARE.

Flat, dark red, pentangular; rays rounded at the end, about one-third the length of the diameter of the disc. Margin rounded, ossicules $\frac{2}{2} \frac{0}{2}$ or $\frac{2}{2} \frac{2}{2}$ on each side, covered with uniform, close granules. Dorsal ossicules rather convex, covered with uniform granules.

Inhab. New Zealand.

Like *A. granularis* in form, but the margin is round, and the marginal plates are more numerous.

ASTROGONIUM INÆQUALE.

Pentagonal, sides rather concave. Arms acute. Dorsal ossicules rather convex, covered with small roundish granules. Marginal ossicules $\frac{8}{8}$ on each side, the two central ones small, narrow; four others large, convex, the two at the tip very small.

Inhab. New Guinea? or Amboina? Capt. Sir E. Belcher.

- B. *Back rather convex, the marginal and dorsal ossicules with a small central convexity or rounded tubercle; the granules of the oral surface rather elongate, rounded.*

ASTROGONIUM TUBERCULATUM.

Body pentangular, sides concave; arms rather produced, acute, tapering; the ossicules of the dorsal surface, of the upper and lower marginal series, each furnished with a small, central, rounded tubercle. Marginal ossicules $\frac{2}{2} \frac{8}{8}$ on each side, the dorsal tubercles on the middle of the back and down the centre of each arm rather larger.

Inhab. Port Natal.

- C. *Body flat; ossicules of the dorsal, marginal and oral surface entirely covered with rather elongated uniform granules; marginal ossicules small, erect, rounded above.*

ASTROGONIUM PAXILLOSUM.

Blackish (perhaps discoloured). Pentagonal, flat. Arm nearly as long as diameter of disc, rounded at the end. All the ossicules of the back, edge, and oral surface, covered with regular, uniform, rather long, erect granules, forming a level surface; granules of the oral surface longest. The marginal ossicules narrow, erect, rounded above. Ambulacral spines elongate.

Inhab. Port Essington.

This species, from the length of the granules, passes towards the *Astropectens*, the elongated tubercles having much the appearance of those which are called *paxilli* in that genus.

PENTAGONASTER DÜBENI.

Body flat, five-rayed; rays two-thirds the length of the diameter

of the disc, rounded at the end; ossicules all convex, rounded. Marginal ossicules $\frac{1}{10}$, large, round, those near the end of the arms largest and most convex.

Inhab. W. Australia.

This species differs from *P. pulchellus* in the marginal ossicules being more equal, and in the arms being much longer and more slender. The ossicules of the dorsal disc are unequal in size and rather irregularly formed; those near the margin on the middle of the sides are oblong and narrow, those of the oral surface are more regular and not so convex, those near the angles of the mouth being the largest and subtriangular.

I have named this beautiful species in memory (I regret to say) of M. W. Von Düben, who has lately published a very admirable paper on the northern species of this family.

TOSIA, Gray.

The granules between the ossicules are deficient in the dead and washed specimens. It has been thought that the fossil species found in the chalk belonged to this genus, but the surface of the ossicules of most of the specimens I have seen show, from the scars with which their surface is covered, that they were covered with granules, therefore they rather belong to the restricted genus *Astrogonium*.

In some species of this genus the ossicules of the oral disc are more or less entirely covered with crowded, flat-topped granules.

TOSIA GRANDIS.

Dorsal ossicules very unequal, flat-topped. Marginal ossicules $\frac{1}{14}$ or $\frac{1}{16}$ on each side, rather convex; the ossicules of the oral surface are furnished with two or three rows of crowded granules, and those near the ambulacra are most covered.

Inhab. Western Australia.

Link, under the name of *P. regularis*, t. 13. f. 22, 23, copied (E. M. t. 96. and *Seba*, iii. t. 8. f. 4) a species like the above, but it has only ten marginal plates. Müller, who thought he examined Link's specimen at Leipsic, describes it as having seven upper and five under marginal plates.

TOSIA AURATA.

Golden yellow. Dorsal ossicules flat-topped, the five in the centre, between the central lines of the arms, largest, and round; the marginal ossicules $\frac{1}{10}$, or $\frac{1}{12}$, rather convex and nearly equal (that nearest the top not being longer than the others); the ossicules of the oral disc, all except a few in the middle of each area, entirely covered with flat-topped granules.

Inhab. Australia. Brit. Mus., three spec.

In others, the ossicules of the oral surface are only edged with a single series of granules, like those of the back.

TOSIA TUBERCULARIS.

Yellow, edges reddish. The dorsal ossicules convex, subtubercular,

those of the centre of the arms highest, those between the arm in the centre largest, nearly flat. The marginal ossicules $\frac{6}{8}$ or $\frac{8}{8}$ on each side, convex, subtubercular, the one near the top of the arm largest and oblong, longitudinal, convex. The ossicules of the oral surface small, each surrounded with a single series of granules.

Var. ? or young ? The ossicules of the oral surface near the edges covered with granules.

Inhab. Swan River.

There is a specimen in the British Museum with six marginal ossicules very like the above, but differing from it in the dorsal ossicules being only convex and rounded ; it has the same convex and large marginal plate.

TOSIA RUBRA.

Red brown. Dorsal ossicules rather convex, rounded. Marginal ossicules $\frac{10}{10}$ on each side, rather convex, equal, that at the tip of the arms smaller, narrow. The ossicules of the oral surface flat-topped, with a single series of marginal granules.

Inhab. Australia.

TOSIA AUSTRALIS, Gray, Ann. Nat. Hist.

Yellowish or reddish. Dorsal ossicules rather convex, rounded. Marginal ossicules $\frac{6}{8}$ on each side, rather convex, equal ; the ossicules of the oral surface flat-topped, with a single series of marginal granules.

Inhab. W. Australia, Swan River.

PETRICIA.

Body convex, five-rayed. Skin above and below varnished and spineless. Back strengthened with numerous, sunken, moderate-sized ossicules ; the margin with two series of larger oblong ossicules, but spineless ; the oral surface with rather regularly disposed smaller ossicules. Ambulacral spines subulate, placed in pairs, with a second series of similar but rather larger spines on the outer side of them.

This genus is very like *Porania*, but the back does not appear to be angular, the margin is edged with spines, and the ambulacral spines are in pairs, and not single as in that genus. The ossicules of the back and oral surface are punctured, and one of them situated near the edge of the back, in the middle space between the arms, is furnished with a linear pore edged with convex lips.

PETRICIA PUNCTATA.

Orange, when dry.

Inhab. the Reef of Attagor. J. B. Jukes, Esq.

There is a single species of this genus in the British Museum collection.

I may here remark, that the specimen of *Porania gibbosa*, the *Asterias gibbosus* of Leach, and *Goniaster Templetoni* of Forbes, in the British Museum from Arran, are exactly like *Asterias pulvillus* of Müller, received from Norway, in the same collection.

PATIRIA.

The upper side, between the angles of the arms, is covered with small, roundish groups of spines.

This genus may be divided into three sections:

1. *Body pentagonal; the dorsal ossicules lunate, narrow; the edge of the arms acute.*

PATIRIA COCCINEA, Gray.

Asteriscus coccineus, Müller & Trosch. 43.

The roundish group of spines between the lunate ossicules are very abundant.

2. *Body five-rayed; rays thick, rounded; dorsal ossicules lunate, sub-triangular; arms convex above and rounded on the sides.*

PATIRIA GRANIFERA.

? *Asterias granifera*, Lam. n. 24?; var. à petits grains, Oudart, t.

Brown. Back rather convex. The arms broad, rounded at the end, nearly as long as the diameter of the disc, rounded above, flat beneath; the lunate dorsal ossicules covered with short, crowded spines, and with only a few small tufts of spines between them, the ossicules of the oral surface each with a transverse line of six or eight spines.

Inhab. —?

Variety, the arms more slender, about one-third longer than the diameter of the disc.

Inhab. —? Brit. Mus.

The variety may be a distinct species, but the specimen is not in sufficiently good preservation to determine this point with accuracy.

3. *The body five-rayed, rays thick, rounded; the dorsal ossicules, especially those at the end of the arms, broad, rounded, the back covered with two or three beaked pedicellaria nearly hiding the tubercles.*

PATIRIA OCELLIFERA.

Asterias ocellifera, Lam. 45; Oudart, t. . fig. .

Body five-rayed; arms thick, rounded, as long as the diameter of the disc, bluntish at the end; the dorsal ossicules broad, oblong or roundish, reddish, covered with short, crowded spines; the oral surface with transverse rows of three to five mobile spines.

Inhab. —?

This species much more nearly resembles Oudart's figure than the species I have described under the name of *Nectria oculifera*.

PATIRIA OBTUSA.

Brown, depressed, five- to six-rayed; rays depressed, rounded at the end; dorsal surface with lunate ossicules crowded with short spines; oral surface with circular groups of crowded spines in the middle of each ossicule.

Inhab. Panama. Sandy mud, six to ten fathoms.

PATIRIA ? CRASSA.

Pale yellow (dry), five-rayed; rays thick, rather tapering, about half as long again as the diameter of the disc. Dorsal surface formed of convex, subhemispherical ossicles, covered with crowded minute spines. The oral surface with roundish groups of short, crowded spines, like *paxilli*.

Inhab. W. Australia. Mr. Gould.

PTERASTER CAPENSIS.

Body subpentagonal, swollen, edge very thick, rounded; back convex, reticulated, with rounded groups of very small ossicles at the junction of the reticulations.

Inhab. Cape of Good Hope.

The spines of the ambulacra are like those of *Pteraster militaris*, but they are longer, and the series of webbed spines on their outer margins are scarcely longer than those of the ambulacra, while in the northern species they are much longer and thicker, and there is no appearance of the two long glassy spines at the angle of the mouth, so distinct and peculiar in that species.

GANERIA.

Body flat, five-rayed. Back coriaceous, strengthened with numerous small, linear and curved series of very short cylindrical spines. Margin perpendicular, with two series of narrow ossicles, each armed with a central, erect, linear series of short cylindrical spines. Oral surface covered with diverging spines, one being placed on each ossicle. Ambulacra linear, with two series of tentacles, and edged with subulate spines, two on each ossicle, and with a series of diverging spines at the angles near the mouth.

GANERIA FALKLANDICA.

Body five-rayed; rays as long as the diameter of the disc, rather blunt at the tip.

Inhab. Falkland Islands. Captain Sir James Ross.

3. DESCRIPTION OF A NEW SPECIES OF FULGORA.

BY ARTHUR ADAMS, ESQ., R.N.

FULGORA (HOTINUS) SULTANA, Adams and White. *Fulg. thorace superiore et rostro sanguineis; elytris ad basin nigro-fuscis lineis ochreis venosis, ad apicem ochreo-fuscis; alis ad basim intense carmineis, ad angulum analem roseis, ad apicem fuscum quatuor vel quinque maculis rotundatis albis ornatis.*

Rostrum and upper surface of thorax of a rich blood-red colour. The form of the beak intermediate between that of *H. clavatus* of Westwood and *H. pyrorhynchus* of Donovan. Elytra blackish brown at the base, traversed by ochraceous veins, with the tip ochraceous brown. The wings with the base of a deep carmine fading to pale pink towards the anal angle, the tips brown, with four or five roundish white spots. Body above straw-coloured.

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Body covered, when alive, with a white mealy substance. Lantern not luminous by day or night. Remains in a torpid state during the heat of the day, and becomes more active in the evening.

Forest of Borneo near Tampasook.

4. SHORT DESCRIPTIONS OF SOME NEW SPECIES OF CRUSTACEA IN THE COLLECTION OF THE BRITISH MUSEUM. BY ADAM WHITE, F.L.S.

Family PARTHENOPIDÆ.

CRYPTOPODIA DORSALIS, White and Adams, n.s.

Carapace narrower and wider than the same part in the *Cryptopodia fornicata*, the greater part of the back covered with slight pustules; on the posterior part of the carapace are two deep grooves placed longitudinally and slightly bent, so as to have a lyre-shaped form; posterior edge of the carapace with coarser and rounder crenations than in *C. fornicata*; the ridges on the chelæ with blunter tubercles.

This distinct and beautiful species of a singular genus was found by Mr. Adams in the Sooloo Sea, where the bottom was stony.

When alive, it is of a dirty flesh-colour, with brown markings and minute black specks; on each chela there is an orange linear spot: under surface of a dead white, on the breast reddish.

Mr. Adams informs me that the species of this genus resemble those of *Calappa* in their habit of simulating death when disturbed, folding the chelæ close to the front of the carapace and concealing their legs under the dilated sides of the carapace. They are always found in deep water, while the *Calappidæ* are found on sandy flats, sometimes buried under the sand.

Family OCYPODIDÆ.

GELASIMUS CRASSIPES, White, Cat. Crust. in Brit. Mus. p. 36.

Carapace very much arched, suddenly narrowed behind; four hind pair of legs thicker and stronger than in other species; front with a lobe, without narrow stalk.

Hab. Philippine Islands (Siquejor). From Mr. Cuming's collection.

GELASIMUS BELLATOR, White, l. c.

Carapace with the fore-part just behind the insertion of eye-peduncles sinuated, the front slightly dilated into a rounded lobe. Larger hand with the fingers very long, the moveable with the sides nearly parallel, two or three larger tubercles on the edge near the base; fixed finger margined on the under side; the cutting edge with a very wide shallow tubercular sinus at base; at the end of sinus beyond the middle a strong wide tooth, which gradually slopes down to the end, which curves up.

Hab. Philippine Islands. From Mr. Cuming's collection.

GELASIMUS CULTRIMANUS, White, l. c. p. 35.

Front between the eyes with a small dilated rounded lobe. Edge

of lower orbit very distinctly crenated; carapace with the upper surface smooth; the lateral edges rounded, without any sharp keel from the outer orbital angle. Larger hand with the fingers wide, both at the end slightly curved outwards, the lower finger with a very wide sinus in the middle; near the end a wide lobe serrato-crenated on the edge; moveable finger with the lower edge nearly quite straight.

Hab. Philippine Islands. From Mr. Cuming's collection.

GELASIMUS PORCELLANUS, White, l. c. p. 36.

Eye-pedicels very long; the frontal portion of carapace not narrowed at base; the hind part of carapace much longer than the side. Lower finger thickened at the end, the inner margins of both fingers with four larger tubercles amongst the small crenules.

Hab. Borneo. Presented by the Lords of the Admiralty.

Family MAIADÆ.

TYCHE, Bell.

TYCHE EMARGINATA, White, l. c. p. 10.

Carapace with the dilated part behind, deeply notched in the middle; the tubercles on the sides of the depressed part with hairs.

The genus *Tyche* was established by Professor Bell in the Zoological Transactions for a species from Panama, which he has described and figured under the name of *T. lamellifrons*. The specimen from which the above brief description is taken is very much mutilated, but is clearly distinct from Mr. Bell's.

Hab. West Indies. British Museum.

Family THELPHUSIDÆ.

VALDIVIA, n. g.

Outer jaw-feet with second joint wider than long; third joint longer than wide, slightly notched at the end. Carapace depressed, rather more rounded in the outline than in *Thelphusa*; the latero-anterior edge with four sharp teeth directed forwards; legs very long, last joint very long, smooth.

This genus is closely allied to *Trichodactylus*.

VALDIVIA SERRATA, White, l. c. p. 31.

Front quite straight; a strong distinct keel from last tooth on side of carapace to hind part; the whole upper surface of carapace and legs is covered with a brownish epidermis.

Hab. —? British Museum.

Family GRAPSIDÆ.

UTICA, White, n. g.

Carapace somewhat eight-angled, tabular, the latero-anterior margin with three teeth; the latero-posterior part of the carapace ob-

lique; carapace behind very straight; behind the middle there is a very strong transverse ridge. Outer jaw-feet with the third joint on the outside straight, not dilated. Fore-legs small; hind-legs very long; tarsus not particularly dilated, somewhat elongated, fringed with hairs, as is the preceding joint.

This genus, which is shortly characterized above, belongs to the family *Grapsidæ*, being nearly allied to *Trichopus*, De Haan, which is synonymous with *Varuna*, M. Edwards.

UTICA GRACILIPES, White, l. c. p. 43.

Front wide, fore-edge very straight; behind it, and extending to the middle of the carapace, there is a considerable, wide, somewhat three-sided elevation, separated from the transverse ridge by a deep lunated depression, from the ends of which a slight impressed line proceeds to the side of the ridge where it deepens; legs very slender and fringed with hair.

This species is a native of the Philippine Islands, from which it was first brought by Mr. Cuming. He found it in a freshwater rivulet among the mountains of the island of Negros. Mr. Adams found it also in the island of Mindanao, and from his journal has given me the following description, taken from the crustacean when alive:—

“Carapace dark liver-colour; legs reddish brown; under surface dark brown, on the legs with a lighter tinge; abdomen also of a lighter colour, with a yellowish line down the middle. ♀. Frequents the deep, still, muddy freshwater rivers of the island of Mindanao, hiding under weeds and rotten wood. When caught this singular crustacean feigns death, contracting its limbs and rendering them rigid, as if it were in a catalepsy.”

5. DESCRIPTIONS OF SEVERAL NEW SPECIES OF SPONDYLUS. BY G. B. SOWERBY, JUN.

SPONDYLUS UNICOLOR. *Spond. testâ solidâ, obliquè ovali, rubro-violascente; costis 6 principalibus, squamis crassis, arcuatis; subtùs concavis, paululùm palmatis, propè marginem numerosis; costis interstitialibus spinis crassis, brevibus, arcuatis ornatis; inter costas sulcis nonnullis.*

Hab. —? Mus. M. Grüner; G. B. Sowerby.

SPONDYLUS CUMINGII. *Spond. testâ liberâ, regulari, subrotundatâ, subdepressâ; areâ cardinali parvâ; costis principalibus 6 elevatis, lævibus, squamis subelongatis, lævibus, arcuatis, palmatis, ad latera palmarum undulatim fimbriatis; interstitiis imbricatim striatis; colore fusco rubescente.*

A free-growing species, with short cardinal area, in some degree resembling *S. regius* and *S. imperialis*, but most remarkable for the beautiful manner in which the arched palmated scales are frilled and fluted at the sides.

Hab. —? Mus. H. Cuming.

SPONDYLUS LIMBATUS. *Spond. testâ ovali, crassâ, vix costatâ, squamis depressis, lævibus, palmatis, brevibus, irregularibus, inæqualibus, 9 ad 11 dispositis; interstitiis minutissimè striatis, cardine magno; colore squamarum croceo, interstitiarum obscurè violaceo; intus limbo purpureo.*

Hab. Persian Gulf. Mus. Grüner. Brit. Mus.; G. B. Sowerby.

SPONDYLUS SINENSIS. *Spond. testâ lævi, elongato-ovali, areâ cardinali plerumque elongatâ; costis 5 ad 6 principalibus, vix elevatis, squamis lævibus, depressis, palmatis; interstitiis lævibus, costis inæqualibus et squamis minoribus; colore pallidè fulco, vel roseo, vel albo, prope umbonem fusco variegato.*

Remarkable for the smooth, depressed, palmated, spoon-shaped scales on the five or seven principal ribs, which are repeated in miniature in the interstices.

From China.

SPONDYLUS LINGUA-FELIS. *Spond. testâ ovali, crassâ, areâ cardinali et auriculis magnis; costis numerosis, vix elevatis, spinis brevibus, æqualibus, numerosis armatis; colore fusco, subtùs croceo.*

A much more solid shell than *S. asperrimus*, with the hinge large; the colour is a uniform dark brown, which is shown in the interior by a well-defined border. The shell is covered by nearly equal ribs, which are armed by short, thick, slightly curved prickles.

Hab. —? Mus. M. Grüner.

SPONDYLUS DIGITATUS. *Spond. testâ subrotundatâ, tenui, costatâ; costis 6 ad 9 principalibus, vix elevatis, squamis rectiusculis, arcuatis, ad terminos palmatis, aculeatim divisis; interstitiis spinosis; colore fusco, vel rubro, vel purpureo, ad umbones rubro variegato.*

The peculiarity of this species consists in the beautifully branched and digitated palmations which terminate the erect and arched scales.

Hab. Bermudas; Belcher. Mus. H. Cuming.

SPONDYLUS ASPERRIMUS. *Spond. testâ subrotundatâ; costis numerosis vix elevatis, subæqualibus, aculeis brevibus, erectis, creberrimis, subtùs canaliculatis; interstitiis scabriculis et spinosis, colore valvæ superiori fusco, prope umbonem variegato; valvæ inferiori croceo.*

Hab. —? Mus. H. Cuming.

SPONDYLUS TENUISPINOSUS. *Spond. testâ ovali, tenui, costis principalibus 8 spinis elongatis, tenuibus, erectis, numerosis, spinis interstitialibus minutis; interstitiis minutè imbricatis; laminis valvæ superioris elegantissimè foliaceis; colore pallidè cinereo, prope umbonem rubro variegato, valvæ inferioris albo, prope umbonem flavido rubro radiato.*

This species is distinguished by the thin, sharp, erect, white spines which ornament the numerous ribs. The upper valve is of a pale ashy colour, variegated with red near the umbo, and the under

valve is white, with beautifully foliated laminæ and a few graceful spines.

Hab. Australia. Mus. Cuming.

June 8, 1847.

Harpur Gamble, Esq., M.D., in the Chair.

The following papers were read:—

1. ON THE FINNER WHALES, WITH THE DESCRIPTION OF A NEW SPECIES. BY J. E. GRAY, ESQ., F.R.S. ETC.

Sibbald has described and figured two specimens of Finner Whale. Artedi, and after him Linnaeus, regarded these figures as representations of separate species, but the characters which they gave for the species appear to depend solely on the state the specimens were in when described and figured. These species have been generally adopted in the Fauna of this country.

The WHALES appear to differ greatly from one another in the degree of mobility of the neck, as is well-shown in the union or separation of the cervical vertebræ, and in the variations in the development of their lateral and spinous processes.

The union or separation of the cervical vertebræ appears to afford good generic distinctions.

Duvernoy, in the second edition of Cuvier's 'Comparative Anatomy,' has observed, "In the Cetacea the seven cervical vertebræ of the genus *Balæna* are all soldered together, and sometimes the first dorsal is equally soldered to the cervical.

"In the genus *Physeter* the atlas is distinct, and the six other vertebræ are soldered.

"In the *Delphinus* the atlas and axis only are united, and the five other vertebræ remain separate, but they are very thin.

"Lastly, in the Rorquals (Pike Whales), *Delphinus gangeticus* (the genus *Platanista*), the Dugong and Lamantin, they are all or nearly all separate."—Duvernoy in *Cuv. Anat. Comp.* ed. 2. i. 195.

I may further observe, that in *Balænoptera rostrata*, which I have considered as the type of *Balænoptera*, the second and third cervical vertebræ are united by their spinous processes, while the fourth, fifth, sixth and seventh vertebræ are separate and well-developed; while in *Physalus Boops*, *antiquorum* and *Sibbaldii*, and in *Megapteron longimanus* they are all well-developed, and separate from one another. In the Grampus (*Orca gladiator*) the first five cervical vertebræ are united together into one body, and the sixth and seventh are very thin,

rudimentary and separate. In *Hyperoodon* all the cervical vertebræ are rudimentary and united, as in *Balæna*. In *Monoceros* the first and second cervical vertebræ are separate and large, and the remainder are very thin, separate, and nearly rudimentary.

M. Cuvier (*Oss. Foss.* v. 378, 380) has observed that the second and third cervical vertebræ of the Cape *Megapteron* are united together by their bodies: this does not appear to be the case with the Greenland *Megapteron longimanus*.

The union of the vertebræ in the different genera appears to take place at an early period in the life of the animal, for in the skeleton of a young *Balænoptera rostrata* which has the epiphysis of the vertebræ and arm-bones quite separate, the vertebræ were firmly united.

Cuvier, in his researches on the Whales (*Oss. Foss.* v. i. 378, 380. t. 26. f. 13 and 18), observes that the two kinds of true Whale (*Balæna*) might be distinguished by the form of the lateral processes; and Professor Eschricht of Copenhagen has made the same observation with respect to the Finner or Pike Whales (*Balænoptera*); and from what I have observed, they appear to present the best character for the distinction of the species, for there can be no doubt that the expanded lateral processes of the *Physalus antiquorum* must be for a very different purpose, and require very different muscles for their movements than the short lateral processes of *Physalus Boops* and *Sibbaldii*.

In my Essay on the Cetaceous animals published in the 'Zoology of H.M.S. Erebus and Terror,' from the examination of several skeletons and their fragments and the descriptions of different authors, I attempted to establish that there were three distinct British species, distinguished by good zoological and osteological characters. Having lately had occasion to examine other specimens, and being enabled to make more minute comparison, I am now satisfied that there is a fourth species which inhabits our coast, and the re-examination of these specimens has enabled me to correct some inaccuracies in my former account.

In the paper above referred to I proposed to divide the genus *Balænoptera* into three subgenera; but on reconsideration I think it preferable that it should be divided into two genera, retaining the name *Balænoptera* for one of the species, and using the old generic name of *Physalus* for the other three, the genera being established on both zoological and osteological characters.

GENUS BALÆNOPTERA, PIKED WHALES.

The pectoral fin one-third and the dorsal fin two-thirds the length of the body from the end of the nose. The second and third cervical vertebræ united by the spinous process. The lateral process of the second cervical vertebra rather expanded, united, wing-like. Vertebræ 46 to 48. The pectoral fin moderate, about one-eighth the length of the body. Dorsal fin behind the orifice of generation. Chest with longitudinal folds.

BALÆNOPTERA ROSTRATA, Gray, Zool. Voy. H.M.S. Erebus and Terror, 50. t. 2.

Balæna rostrata, Müller, Hunter, &c.

Rorqualus minor, Knox, Jardine N.L. 142. t. 7.

Inhabits the British coast, North Seas, Greenland.

There is a skeleton of this species in the British Museum, and a skull in the museum of the Hull Philosophical Society.

In this species the first cervical vertebra is rather broader than long; the central hole is half as high again as broad. The second and third cervical vertebræ are united together by the upper edge. The second cervical vertebra has a broad, much-expanded, lateral process, with an oblong central hole near the body of the vertebra, reaching rather more than half its length. The third, fourth, fifth and sixth cervical vertebræ have two (upper and lower) lateral processes; the upper process of the third is the shortest and least developed, and these processes increase in length to the sixth. The lower process of the third is the thickest; the fourth and fifth rather small, and in the sixth the basal part of the process is shorter, and the upper part much-elongated and thinner. The seventh has only the upper process, which resembles that of the first dorsal in form, but is smaller.

This species is the smallest of the family, and rarely if ever exceeds twenty-five or thirty feet in length. It is easily known by the white spot on the base of the upper side of the pectoral fin.

GENUS PHYSALUS, FINNER WHALES.

The pectoral fin one-fourth, the dorsal fin three-fourths the length of the body from the end of the nose. The cervical vertebræ all separate and free. Vertebræ 54 to 64. Pectoral fin moderate, about one-eighth the length of the body. Dorsal fin behind the orifice of generation. Chest with longitudinal folds.

This genus may be divided into two sections, according to the form of the transverse apophyses of the cervical vertebræ.

* *The transverse apophyses of the cervical vertebræ much-expanded, united, forming a ring in the second to the sixth vertebræ.* **PHYSALUS.**

1. PHYSALUS ANTIQUORUM.

Balæna Physalus, Scoresby.

Balænoptera antiquorum, Fischer, Syn. 325; Gray, Z. E. & T. 50.

Rorqual de la Méditerranée, Cuvier, Os. Foss.

Inhabits British Ocean, Mediterranean.

Skeleton at Black-Gang Chine, from Isle of Wight, and in Mr. Patch's show, from Plymouth.

The transverse apophyses are as broad as the body of the vertebra, and the latter is oblong, half as broad again as high. Vertebræ 54, viz. 7 cervical, 13 dorsal, 17 lumbar, and 17 caudal. The ribs are simple.

The lateral processes of the cervical vertebræ are much longer than

the width of the body of the vertebra; the lateral process of the second cervical has a small, nearly central perforation, and this perforation gradually becomes larger on each succeeding vertebra, until in the sixth it nearly occupies the whole disc of the lateral process, the seventh being only found with a narrow elongated process from the upper edge, the lower process being reduced into the form of a small tubercle.

The Plymouth specimen is travelling the country, curiously mounted in three caravans (the first containing the head, the second the thorax, and the third the middle of the tail), so as to exhibit the parts of the skeleton in their proper situations when the caravans are placed one after the other with their ends removed, and the cervical, lumbar, and caudal vertebræ suspended between or beyond them.

This specimen was found floating on the sea in a decomposed state on the 20th of October, 1831, in Plymouth Sound, and is said to have been 102 feet long and 75 feet in circumference, but most likely the abdominal cavity was distended by internal decomposition.

The lumbar vertebræ are thick and large; both these characters must render this Finner much more powerful and active in the water than any of its allies. The lower jaw 17 feet long; the blade-bone 32 inches by 51; the upper arm-bone 20 inches long by $10\frac{1}{2}$ wide; the lower arm-bone 31 inches long. The lumbar vertebræ are 11 inches long and 14 inches wide; the first rib 59 inches long and $10\frac{1}{2}$ inches wide at the sternal end. The chest-bone is 28 inches wide and 18 inches long.

In this skeleton the proprietor has placed a blade of Greenland whalebone (*Balæna mysticetus*) on one side, and several of South Sea whalebone (*Balæna australis*) on the other side of the upper jaw, in the place of the true baleen of *Physalus*.

There is a second skeleton, which most probably belongs, or is very nearly allied to this species, exhibited at Black-Gang Chine, on the south side of the Isle of Wight, which was caught near the Needles. It was 75 feet long, of a greyish colour.

The skull is 16 feet 7 inches long, 5 feet wide at the orbital notch; the lower jaw 16 feet 9 inches long; the sternum 26 inches wide and 14 long; the upper arm-bone 24 inches long, the lower 33 inches long.

This skeleton chiefly differs from the former in the bones of the arms being rather longer, though the body is one-third shorter; but the length of the Plymouth specimen may be over-estimated.

**** The transverse apophyses of the cervical vertebræ short, of the third, fourth, fifth and sixth separate. RORQUALUS.**

2. PHYSALUS (RORQUALUS) BOOPS.

The transverse apophysis of the second cervical vertebra thick, short, converging, but separate at the end; of the other cervical

vertebræ slender, rather longer, far apart. The upper apophysis of the sixth bent down, rather elongate, the lower one thicker, shorter, and bent up at the end.

Skeleton in the British Museum. Taken on the coast of Wales and towed into Liverpool in 1846.

The length of the skeleton of the Liverpool specimen is 38 feet; the head is 9 feet long. The vertebræ are 60 in number, and there are 15 pairs of simple ribs.

The cervical vertebræ are all separate, and nearly equally developed; the body of the cervical vertebræ is squarish oblong, about one-fourth broader than high. The spinal canal is oblong, depressed, twice as wide as high. The second vertebra is twice as thick as the other, with two large broad lateral processes scarcely as long as half the width of the vertebra, coming together at the end, but separate, and leaving an oblong hole between them. The third, fourth, fifth and sixth each with superior and inferior narrower lateral processes, the upper one of the third being the narrowest, and gradually increasing in thickness to the sixth; the lower of the fourth rather the broadest, and of the sixth the thickest and most tapering at the end.

The third, fourth, fifth, sixth and seventh have only two rather short processes on each side, the upper process being the most slender, compressed and bent down, and the lower one conical, stronger, compressed; the processes of the third vertebra are the thinnest, and they gradually increase in thickness and strength to the seventh or last.

The specimen here described was mentioned in the papers of the day as a *spermaceti whale*!

3. *PHYSALUS (RORQUALUS) SIBBALDII*.

The transverse apophyses of the second cervical vertebra rather elongated, united, leaving only a small subcentral hole; of the other cervical vertebræ slender, shorter and far apart, nearly straight, directed out laterally.

Inhab. Coast of Yorkshire.

There is in the museum of the Hull Literary and Philosophical Society a very perfect skeleton of this species, taken in the Humber, which is fifty feet long. It has 64 vertebræ, as follows: cervical 7, thoracic 16, lumbar and caudal 41; and the arms and paddles are 6 feet 9 inches long; the ribs 16 pair, all simple. The baleen is black.

This specimen is said to have been eight years old, but on what authority I cannot learn.

I have to thank my friend Mr. Pearshall, the curator of the above museum, for his kindness in sending me a detailed drawing of the natural size of the cervical vertebræ of this interesting species.

For the purpose of comparison with the foregoing description, I here add the following account of the cervical vertebræ of *Megapteron longimanus*, or *Hunchback Whale*, from a fine skeleton in the collection of the British Museum.

The second cervical has two very large, thick, converging, lateral processes, as long as half the diameter of the body of the vertebra.

The third, fourth, fifth, sixth and seventh have elongated, slender, superior lateral processes, which bend rather downwards, and the sixth and seventh rather forwards. The fourth and fifth have a very short, rudimentary, inferior lateral process, which is smaller on the left side. The other vertebræ are without any process. The cervical vertebræ are all free.

The upper part of the spinous process of the second vertebra is very large and convex, covering this part of the next vertebra.

I may here remark that Professor Eschricht informed me that he could find no difference between the *Megapteron* of the North Sea and the Cape specimen in the Paris Museum. I may also observe that Cuvier (*Oss. Foss.* v. 381) described the Cape specimen as having the second and third cervical vertebræ united by the upper part of their body, which is not the case with our Northern specimen, and that Cuvier's figures of the lateral process of the Cape specimen are very different from the Northern one here described.

2. ON A NEW SPECIES OF APTERYX. BY JOHN GOULD, Esq.,
F.R.S. ETC.

We have abundant evidence that at some former period New Zealand, and probably the Polynesian Islands, have been inhabited by a remarkable group of Birds, of which the *Dinornis*, so ably described by Professor Owen, formed a part, and of which the genus *Apteryx* is the only form at present known to exist; this form, so different from all others, has been, and will ever be, regarded with great interest, as the sole remnant of a race of which every other genus is believed to be extinct. Hitherto a single species only of this genus has been recorded; I have therefore no ordinary degree of pleasure in introducing to the notice of this Meeting a second, and if possible a still more extraordinary one than that previously described, and as I reported to the meeting held on the 13th of April, I have intelligence of the existence of a third and much larger species than either of them.

The bird I am now about to describe has just arrived from New Zealand by way of Sydney, but unaccompanied by any information as to the locality in which it was procured, or any particulars of its habits and economy.

It appears to be fully adult, and is about the same size as the *Apteryx Australis*, from which it is rendered conspicuously different by the irregular transverse barring of the entire plumage, which, with its extreme density and hair-like appearance, more closely resembles the covering of a mammal than that of a bird; it also differs in having a shorter, more slender, and more curved bill, and in the structure of the feathers, which are much broader throughout, especially at the tip, and of a loose, decomposed, and hair-like texture. I propose to characterize this new species under the name of *Apteryx Owenii*, feeling assured that it can only be considered as a just compliment to Professor Owen, who has so ably investigated the group to which I believe it pertains.

APTERYX OWENII. *Ap. corpus superius fusco et fulvo transversim radiatum; plumis singulis, ad basim argenteo-fuscis, in medio saturatius fuscis, deinde fasciâ semilunari transversâ fulvâ, cui macula succedit informis nigra, ad apicem fulvis. Corpus inferius superiore pallidius, pluma enim quæque inferioris corporis tribus radiis fulvis, superioris tantum duobus ornatur; fulvus quoque color inferiore longius quam superiore corpore in apicibus plumarum extendit.*

Face, head and neck dull yellowish brown; throat somewhat paler; all the upper surface transversely rayed with blackish brown and fulvous; each individual feather being silvery brown at the base, darker brown in the middle, then crossed by a lunate mark of fulvous, to which succeeds an irregular mark of black, and terminated with fulvous; under surface paler than the upper, caused by each feather being crossed by three rays of fulvous instead of two, and more largely tipped with that colour; the feathers of the thighs resemble those of the back; bill dull yellowish horn-colour; feet and claws fleshy-brown.

Total length, from the tip of the bill to the extremity of the body, 18 inches; bill, from the gape to the tip, $3\frac{5}{8}$; bill, $\frac{7}{8}$ broad at the gape; tarsi, $2\frac{1}{4}$; middle toe and nail, $2\frac{1}{2}$.

Hab. New Zealand.

Remark.—In this species the wing is even more rudimentary than in the *Apteryx Australis*.

3. DRAFTS FOR A NEW ARRANGEMENT OF THE TROCHILIDÆ. BY JOHN GOULD, ESQ., F.R.S. (CONTINUED*), WITH THE CHARACTERS OF TWO NEW GENERA AND DESCRIPTIONS OF THREE NEW SPECIES.

METALLURA, gen. nov.

Char. gen.—Rostrum rectum, sublongum. Plumæ molles sericeæ. Cauda subgrandis, rotundata. Gula et rectrices infrâ tanquam metallum expoliturum luminosæ. Alæ subgrandes. Tarsi nudi. Pedes subgrandes. Digitus et unguis postici digitum et unguem medios longitudine æquantes vel superantes.

Gen. char.—Bill straight, moderately long; plumage soft and silky; tail rather large and rounded; throat and under surface of the tail-feathers very luminous, like shining metal; wings moderately large and apparently adapted for an easy mode of flight; tarsi bare; feet rather large; hind-toe and nail as long or longer than the middle toe and nail.

Females.—Much less brilliant than the males in every respect, and in most of the species wanting the luminous mark on the throat.

The species are—

Trochilus cupreocauda, Gould.

Trochilus æneocauda, Gould.

Trochilus Alardi, Bourc.

Trochilus smaragdinicollis, D'Orb.

Trochilus Williami, Bourc.

* See *antè*, pp. 7, 16, 30.

DORYFERA, gen. nov.

Char. gen.—*Rostrum* forte, ad tertiam partem apicalem, quæ sursum curvatur, rectum. *Alæ* subgrandes. *Cauda* rotundata, subrigida, rectricibus singulis mucronatis. *Tarsi* aliquâ parte vestiti. *Pedes* magnitudine mediocri. *Digitus* et *unguis postico* digito et ungui medio longitudine æquales.

Gen. char.—Bill long, straight for three-fourths of its length, and inclining upwards to the extremity; wings moderately large; tail rounded, rather rigid, each feather ending in a point; tarsi partly clothed; feet moderate in size; hind-toe and nail as long as the middle toe and nail.

The species are—

Trochilus (Doryfera) Louise.

TROCHILUS (DORYFERA) VIOLIFRONS. *Troch. fronte maculâ rotundâ metallicè violaceâ notatâ; occipite, collo, et dorso superiore æneo-viridibus; dorso inferiore, et tectricibus caudæ superioribus, sordidè griseo-cæruleis; gulâ, et abdomine, nigris viride splendentibus; tectricibus caudæ inferioribus intensè violaceis; caudâ ipsâ nigra violaceo subnitente.*

On the forehead a round spot of beautiful metallic violet; back of the head, neck and upper part of the back bronzy green, passing into purer green on the back and shoulders; lower part and upper tail-coverts dull greyish blue; throat and abdomen black, with green reflexions; under tail-coverts deep violet-blue; wings purplish brown; tail black, slightly glossed with green; bill black; feet brown.

Total length, $4\frac{1}{8}$ inches; bill, $1\frac{1}{4}$; wing, $2\frac{1}{4}$; tail, $1\frac{3}{8}$.

Remark.—This most interesting addition to the *Trochilidæ* is precisely of the same form in every respect as *T. Louise*, but differs most remarkably in the colouring of its plumage, the forehead being violet instead of green, and the under surface black instead of golden green.

LOPHORNIS REGINÆ. *Loph. vertice, et cristo, ferrugineo-rubris, plumis singulis maculâ viride ad apicem ornatis; loro, gulâ et colli lateribus, viridibus, candentibus; maculâ plumarum lanceolarum subviride albâ; nuchâ, et dorso superiore, fulgente viridibus; dorso inferiore, uropygio, et tectricibus caudæ superioribus, æneo-fuscis; uropygio lined albâ transversim fasciatâ; caudâ castaneo-fuscâ, rectricibus duabus intermediis ad apicem et margines, rectricibus etiam duabus externis ad margines, æneo-viridibus.*

Crown of the head and crest bright rusty red, each feather with a beautiful dark green spot at the tip; lores, throat and sides of the neck resplendent metallic green, beneath which is a patch of white lanceolate feathers; back of the neck and upper part of the back lustrous green; lower part, rump and upper tail-coverts bronzy brown; rump crossed by a distinct line of white; tail chestnut-brown, the tips and margins of the two middle and the margins of the external feathers rich bronzy green; abdomen light metallic green; wings purplish brown; bill reddish brown at the base, dark brown at the tip; feet brown.

Total length, $2\frac{3}{4}$ inches; bill, $\frac{1}{2}$; wing, $1\frac{5}{8}$; tail, $1\frac{1}{8}$.

Remark.—Nearly allied to *Lophornis Regulus* and *ornatus*, but differing from the former in having the crest-feathers broader and the green spots on the tips much larger. It is a very beautiful species.

TROCHILUS (GLAUCIS?) CÆRULEOGASTER. *Troch. vertice, nucha, uropygio, et tectricibus caudæ superioribus, æneo-viridibus; mento, colli lateribus, et dorso viridibus; gula, et abdomine, cyaneis; tectricibus caudæ inferioribus magnis, albis; caudâ nigra pallidè cyaneo nitente.*

Crown of the head and back of the neck dull bronzy green; back green, passing into bronzy green on the rump and upper tail-coverts; chin and sides of the neck green, gradually passing into the beautiful blue of the throat and abdomen; under tail-coverts largely developed and of a pure white; tail black, with steel-blue reflexions; wings purplish brown; bill black; feet brown.

Total length, $4\frac{3}{4}$ inches; bill, $1\frac{1}{8}$; wing, $2\frac{3}{4}$; tail, 2.

Remark.—About the same size as, and similar in every respect to, *T. Buffonii*, Lesson, but differs from it in the throat and abdomen being beautiful blue instead of green.

June 22, 1847.

Harpur Gamble, Esq., M.D., in the Chair.

The following communications were read:—

1. DESCRIPTION OF A NEW LIZARD DISCOVERED BY MR. DYSON IN VENEZUELA. BY J. E. GRAY, Esq., F.R.S., F.Z.S.

In the 'Annals and Magazine of Natural History' I described a lizard, from Columbia, which Mr. Brandt sent me under the name of *Argalia marmorata*, and considered it as the type of a peculiar family. In Mr. Dyson's collection, just received at the Museum, there is a second species of this genus from Venezuela, differing from the former not only in the colouring, but in the size of the head and the comparative length of the tail.

This genus has much the appearance of the *Barisia*, but is at once known from them and other New World *Zonuridæ* by having femoral pores, by the position of the nostrils, and by the scales on the side of the body not being granular, though rather smaller than those of the back.

ARGALIA OLIVACEA.

Olive-green; beneath pale brown; sides of neck and body yellow spotted; tail rather longer than the body and head, thick at the base. Palms of the feet bright yellow.

Inhab. Venezuela.

Mr. Dyson found a pair of these lizards on a tree in the mountains, 8000 feet above the level of the sea, near the Colonia de Tova, by a tree called *Grand Cedro*, the largest known in Venezuela, and much larger than that described by Humboldt.

They now form part of the collection of the British Museum. The sexes are quite alike in form and colour.

2. ACCOUNT OF A BLACK AND WHITE MOTTLED SWAN, ON THE WATER IN THE DEMESNE OF THE EARL OF SHANNON, CASTLE MARTYR, COUNTY CORK. BY MAURICE GLENCON, GAMEKEEPER TO THE EARL OF SHANNON. COMMUNICATED BY THE PRESIDENT.

In the year 1843 a male black swan paired with a white female swan; she laid six eggs, and hatched four cygnets. Before they got to the age of six months, three of them met with untimely deaths. This bird in 1845 paired with its father, and laid four eggs, which came to nothing. It is very like the father about the head, but about the body it resembles the white swan. It lives on the water with others, black swans and white swans, and agrees with both.

The above statement may be relied on as authentic and correct, because I have witnessed it from beginning to ending.

Upon the same island where this bird was born I have seen more than eighty cormorants' nests, on Scotch fir-trees not under sixty feet in height, in which they hatched their young. This was fourteen years ago.

Castle Martyr, June 1847.

3. ON THE PORCUPINES OF THE OLDER OR EASTERN CONTINENT, WITH DESCRIPTIONS OF SOME NEW SPECIES. BY J. E. GRAY, Esq., F.R.S., F.Z.S. ETC.

This genus, on account of the similarity of the appearance of the species, has been very imperfectly examined. M. F. Cuvier, in the eleventh volume of the 'Mémoires du Muséum,' has given a paper on the crania and teeth of the family, and divided them into genera, forming those of the old world, which alone came within the scope of this communication, into two: the first he calls *Hystrix*, and figures as the type a skull which he considers as that of the *Porcupine of Italy*; and formed a second genus under the name of *Acanthion* for a skull brought by Leschenault from Java, and a skeleton described by Daubenton (Buffon, H. N. xii. t. 53) in the Paris Museum. He gives a general description and some observations on the relative size of the face and brain-cavity, rather than a character for these genera, and no distinctive character by which the two species of the genus *Acanthion* can be recognized.

The Baron Cuvier does not take any notice of the genus *Acanthion* in the second edition of the 'Règne Animal' (i. 215), but merely observes that the Indian and African species have their heads less swollen; but he formed for the *fasciculated Porcupine* (*H. fasciculata*) a genus under the name of *Atherura*, characterized by the muzzle not being swollen, and the tail elongated and not prehensile. Some authors, as Fischer (Synopsis Mam. i. 267, ii. 602), have considered this animal as the one on which F. Cuvier established his genus *Acanthion*. See on this subject the excellent remarks of Mr. Bennett on the gardens and menageries of the Zoological Society, i. 176.

J. F. Brandt, in the 'Mémoires de l'Académie Impériale des Sciences de Saint Pétersbourg' for 1835, on the Rodent in the museum of that Academy, has also overlooked M. F. Cuvier's genus, and he observes, "The genus *Acanthion* of F. Cuvier I add to the genus *Hystrix*, on account of the resemblance of the cranium of *H. hernitorostris* with that of *Acanthion Daubentonii*. G. Cuvier, although he proposed the new genus *Atherura*, does not say a word respecting *Acanthion* in the new edition of the 'Règne Animal'; and I should almost conclude from his words under the genus *Hystrix* (i. 215),—'there are (in the genus *Hystrix*) species with the head less swollen;' that he himself regarded the quotation *Acanthion* and *Hystrix* as one and the same."—*Mém. Acad. Pétersb.* 1835, 267, note.

I may here remark, that the skull figured by M. F. Cuvier as that of the *Italian Porcupine* does not agree with our specimen of the skull of the European species, and belongs to what I have considered the genus *Acanthion*, as I keep the name of *Hystrix* for the old Linnæan species *H. cristata*: that the skull figured by Brandt as a new species, under the name of *Hystrix hernitorostris*, does agree with our specimen from Xanthus, which I regard as the European species; and though he compares it in the note above quoted with F. Cuvier's figure of the genus *Acanthion*, it differs from that figure in most important characters; while the skull which Brandt figures for that of *Hystrix cristata* very nearly resembles F. Cuvier's figure above referred to, which represents, according to the characters pointed out in this communication, what I regard as the genus *Acanthion*.

Having had the opportunity of comparing the various skulls and skeletons of the species of this genus contained in the British Museum with the skulls of the Indian species in the collection of Colonel Cautley, and with the three skulls in the collections of the Zoological Society, I have been induced to make the following communication to the Meeting, as containing the results of this examination, and with the hope of calling the attention of the Members to the necessity of further attention to this hitherto neglected genus. These skulls form themselves into three groups, and that I may not encumber science with new names, I have used the three already proposed by the brothers Cuvier, though the characters I have given for the genus *Acanthion* may not be such as M. F. Cuvier had in his mind when he formed the division.

Synopsis of the Genera.

- I. Tail short; skull convex above; the nasal and intermaxillary bones large to (or to behind) the front edge of the orbit; the (upper) grinders all with a fold on the inner side.

1. **HYSTRIX**. The intermaxillary broad and truncated, and as wide behind as before. The grinders oblong, longer than broad, with one very distinct fold on the inner and three or four on the outer side.

2. **ACANTHION**. The intermaxillary triangular, tapering behind; the grinders subcylindrical, not longer than broad, with a distinct fold on the inner and two or three on the outer side.

- II. Tail elongate, tufted at the end; skull nearly flat above; the nasal and intermaxillary bones short, not nearly reaching to the front of the orbits. Intermaxillary narrow, truncated behind; the front (upper) grinders (and perhaps all but the last) without any fold on the inner side.

3. **ATHERURA**.

1. **HYSTRIX**.

Tail short; crown and nape crested; spines subcylindrical, striated; the skull very wide, swollen, convex above; the nasal and intermaxillaries large, reaching to the line even with the front edge of the orbit. The intermaxillaries very large, broad, oblong, as wide behind as before, and truncated behind; the palate wide between the grinders; the grinders oblong, longer than broad. The development of the face is produced by the dilatations of the hinder part of the intermaxillary bones.

1. **HYSTRIX CRISTATA**, Linn., &c. (*Crested Porcupine*).

H. hirsutirostris, Brandt, *Mém. Pétersb.* 1835, 375, t. 8. f. 3—6.

Black; spines of the sides greyish, softish, subcylindrical; of the back thick, tapering, with several black rings and a moderate white tip. The upper part of the intermaxillary wider than the width of the nasal. Skull very convex and wide, the palate wider than the width of the teeth.

Inhab. South Europe and Africa.

The spines are described from a specimen from South Africa, presented to the Museum by Dr. W. Burchell, and the skull, from that of an Italian specimen, received from a menagerie, and a young skull with only three grinders, brought from Xanthus and presented to the British Museum by G. Scharff, Esq.

The skull figured by Brandt, *Mém. Acad. Pétersb.* 1835, t. 8. f. 3, 4, 5, 6, as that of his *Hystrix hirsutirostris*, well represents the skull of the young *H. cristata* from Xanthus.

The skull of the Italian porcupine figured by F. Cuvier, and of *H. cristata* figured by Brandt, do not belong to the species above described.

No. CLXXVI.—PROCEEDINGS OF THE ZOOLOGICAL SOCIETY.

2. *HYSTRIX LEUCURUS*, Sykes, *Proc. Zool. Soc.*, (*Indian Porcupine*).

Hystrix cristata, Bennett, *Gard. & Menag. Zool. Soc.* 171: fig. good.

Black; spines of the throat white-tipped (forming a half-collar); of the sides rigid, angular, of the back very long, slender, with several black rings, and a very long, slender, white tip. Skull elongate, rather narrow; the hinder part of the intermaxillary as wide as the nasal. The palate narrow, not wider than the width of the teeth.

Inhab. Bombay. Dukhun, Colonel Sykes. Nepal, B. H. Hodgson, Esq., N. India.

The above description is taken from two adult and one young specimens in the British Museum,—one presented by Colonel Sykes and the others by B. H. Hodgson, Esq.,—two skulls from Mr. Hodgson's specimens, three skulls from Colonel Cautley's collection, and a skull in the museum of the Zoological Society.

The young skull, which has three well-developed and worn grinders, is the same length as the young skull of *H. cristata* from Xanthus, which has the third grinder partly developed. The Nepal skull is much less swollen, less convex above, and nearly one-third narrower, and the teeth are smaller, occupying about one-fourth less space than the three teeth in the European skull.

I may observe, that though these skulls preserve a very distinct character, yet they vary so much amongst themselves as to show that skulls afford no better character for the distinction of species than any other single character, such as colour, but can only be depended on when taken in connexion with the rest of the organization.

In Colonel Cautley's collection there are three adult skulls (nos. 32, 34, 35) of this species from Northern India; they agree nearly in size and in the comparative width of the intermaxillary and nasal bones; one differs from the other two considerably in the width between the orbits, and slightly in the convexity of the frontal line. They are all much larger than Mr. Hodgson's specimen from Nepal.

No. 34 is peculiar for having a fifth grinder appearing behind the fourth on the left side above.

This species is easily known by the very elongate slender spines of the back and by the form of the intermaxillary, though they are subject to some variation.

The figures by Harvey published by Mr. Bennett above-quoted well represent the elongated drooping dorsal spines of this species.

Measurement of the Skulls in inches and lines.

	H. cris- tata.	H. cris- tata.	H. leu- curus.	H. leu- curus.	H. leu- curus.	H. leu- curus.	H. leu- curus.
	Adult.	Junior.	No. 32.	No. 34.	No. 35.	Adult.	Junior.
Length of skull above.....	5 7	4 0	5 10	5 8	5 11	5 0	4 0
Length of nasal	2 8 $\frac{1}{2}$	1 9	3 0 $\frac{1}{2}$	2 8 $\frac{1}{2}$	2 11	2 5 $\frac{1}{2}$	1 9 $\frac{1}{2}$
Width at middle of orbits.	2 3	1 11	2 5	2 3	2 6	2 1	1 7
Width of nose in middle...	1 10	1 4 $\frac{1}{2}$	1 10	1 9	2 0	1 11	1 2 $\frac{1}{2}$
Width of lower edge of zygoma	2 7	2 2	2 11	2 11	2 9	2 7	2 0
Lower edge of zygoma to central suture .....	.....	.....	2 11	2 7	2 10	2 4	
Palate to middle of crown end of nasal .....	.....	.....	2 7	2 2 $\frac{1}{2}$	2 5	2 1	
Length of skull beneath ...	5 10	4 2	6 2	5 7 $\frac{1}{2}$	6 0	5 3	4 1
Length of palates	3 2	2 2	3 3	3 0 $\frac{1}{2}$	3 2	2 10	2 0 $\frac{1}{2}$
Length of grinder series ...	1 5	1 5	1 4 $\frac{1}{2}$	1 3 $\frac{1}{2}$	1 5	1 3	0 10 $\frac{1}{2}$
Length of lower jaw	3 10	2 11	4 2	4 2 $\frac{1}{2}$	.....	3 8	2 11
Width at ear-bones.....	2 1	1 11	2 3	2 1	2 2	1 11	1 8
Width at condyles	1 2	1 0	1 2	1 2 $\frac{1}{2}$	1 2	1 3	1 0
Height of occiput from foramen .....	.....	.....	1 3 $\frac{1}{2}$	1 2	1 3	1 2	

2. ACANTHION.

Tail short; crown and nape not crested. Spikes short, flattened and channeled above. Skull rather elongate, convex above; the nasal and intermaxillary reaching to the line even with the front, or even to the middle of the orbit; the intermaxillaries triangular, narrowed behind; the palate moderately wide between the grinders; the grinders subcylindrical, not longer than broad.

F. Cuvier established his genus *Acanthion* on a skull and skeleton in the Paris Museum. He gave as the character the less convexity of the head and the smaller size of the nose; but he takes no notice of the size and form of the intermaxillary, which appears to be the best character of the group.

M. G. Cuvier and Brandt have not adopted M. F. Cuvier's genus.

This genus presents two very distinct sections:—

* *The nasal very long, broad to the middle of the orbit.* ACANTHION.

† *Malar bone simple. Palatine opening parallel.*

1. ACANTHION HODGSONII, n. s. *Lesser Indian Porcupine.*

Crown and nape without any crest. Blackish brown, neck with a very narrow indistinct white collar. Spines of the head and neck slender, bristle-like; of the front half of the body short, angular, acute, with a deep groove; of the hinder part of the back longer, with a very small pale tip and some white ones; some of the latter are moderately long and thick, with a black end; and others are longer and slenderer, with a subcentral black band. Skull rather elongate, narrowed before the orbit; the intermaxillaries very narrow, and rather

acute behind. Palatine opening narrow and nearly parallel. Malar bone moderately wide, and rather gradually narrowed behind. The nasal holes large; the front end of the nasal over the base of the upper cutting-teeth.

Inhab. India. Nepal; B. H. Hodgson, Esq.

The spinous process of the second cervical vertebra is very large and recurved; of the first dorsal is shorter than the second or others; the ribs are 15·15, very broad and large. The caudal vertebræ are deficient.

This species is described from a half-grown specimen and its skull, and a skeleton of an adult animal from Nepal, presented to the British Museum by B. H. Hodgson, Esq.

†† *Malar bone with a deep notch behind. Palatine opening diverging.*

2. ACANTHION CUVIERI, n. s.

Porc epic d'Italie, *F. Cuv. Mém. Mus.* ix. t. 20*. f. 1. Skull.

Hystrix cristata, *Brandt. Mém. Pétersb.* 1835, t. 8. f. 1, 2. Skull.

Black? Spines? Skull very convex above, very wide over and before the orbits. The hinder part of the intermaxillary rather broad, and rounded at the end. The palatine openings wide, and diverging from each other behind. The malar bone very broad in front, narrow behind. The nasal hole very large; the front edge of the nasal far back behind the base of the cutting-teeth.

Inhab. —? *Mus. Zool. Soc.*

This species is described from an adult skull, with the hinder part of the upper surface cut away, which is contained in the museum of the Zoological Society. It agrees in almost every particular with the skull figured by Brandt and F. Cuvier as that of the *European Porcupine*. Brandt's figure is just half, and Cuvier's rather more than half the size of this specimen. Brandt's figure is most characteristic, both in the posterior position of the nasal bone and the notch in the lower edge of the orbit produced by the sudden narrowing of the malar bone.

** *Skull narrower in front. Nasal bone moderate to the front edge of the orbits. Malar bone with an obtuse post-orbital process.*
ACANTHERIUM.

3. ACANTHION JAVANICUM. *Short-spine Porcupine.*

Acanthion Javanicum, *F. Cuvier, Mém. Mus.* ix. t. 1. f. 3, 4. From a skull; and *Mus. Leyden*.

Hystrix brevispinosus, *Wagner*.

H. torquatus. *Mus.* —?

Greyish black, throat with a large square white spot. Spines of the head elongate setaceous; of the front half of the body short, dark, with a deep groove and a white tip; of the hinder part of the back longer, more cylindrical, white, with a black tip and bands; of the under-side of the tail white; the sides with a few scattered, very slender, white spines. The palate narrowed behind. Condyles of

the skull small. Dorsal vertebræ thirteen, with thirteen pair of rather elongate slender ribs; the spinous process of the first dorsal vertebra as long as the second and following ones. The caudal vertebræ fifteen.

Inhab. India? Java?

There is a skin and skeleton of this species in the collection of the British Museum: it is a male which lived in the Surrey Zoological Gardens for ten or twelve years.

M. F. Cuvier established a species under the name of *Acanthion Javanicum* on a skull from Java in the Paris Museum. In the Leyden Museum there are several specimens of this or the next species, which they regard as M. F. Cuvier's species. Neither M. Cuvier's nor my notes on the Leyden specimens enable me to distinguish to which the names belong.

While living in the Surrey Zoological Gardens it bred with a female of the Common Crested Porcupine, and produced a hybrid specimen, which, with its skeleton, is now in the British Museum collection. The animal is intermediate between the two species, having only a short compressed crest; and the skull is equally intermediate in character, having the broad palate and oblong teeth of *H. cristata*, and the more elongated form of the skull and the triangular intermaxillaries of the male parent.

4. ACANTHION FLEMINGII. *Square-spined Porcupine.*

The palate between the grinders narrow ($2\frac{1}{2}$ lines), and rather wider behind between the last grinders. Condyle of skull large.

The dorsal vertebræ fourteen, with fourteen pair of rather wide ribs; the spinous process of the first dorsal is nearly as long as the second and third; and of the second cervical is large and recurved. Caudal vertebræ seventeen.

Inhab. —? Skull in British Museum.

Measurement of Skulls in inches and lines.

	Acanthion Hodgsonii.		Acan- thion Cuvieri.	Acan- thion Javani- cum.	Acan- thion Fle- mingii.	
	Adult.	Junior.	Adult.			Hybrid.
Length of skull above	4 7 $\frac{1}{2}$	4 2	5 6	4 6	4 6	4 6
Length of nasals	2 6	2 3 $\frac{1}{2}$	2 9 $\frac{1}{2}$	1 10	2 1	1 10
Width over middle of orbits.....	1 8	1 6	2 3	1 7	1 7	1 8
Width of nose in middle	1 3	1 1	1 1 $\frac{1}{2}$	1 1 $\frac{1}{2}$	1 1 $\frac{1}{2}$	1 2 $\frac{1}{2}$
Width of lower edge of zygoma .	2 3	2 0 $\frac{1}{2}$	2 11	2 0 $\frac{1}{2}$	2 0	2 1
Width of lower edge of zygoma } to central suture .....	.....	1 9	2 5	.....	.....	1 10 $\frac{1}{2}$
Width of palate to middle of } crown end of nasals .....	.....	1 6 $\frac{1}{2}$	2 3	.....	.....	1 8
Length of skull beneath	4 8	.....	5 4	4 5	4 5	4 5
Length of palate	2 5 $\frac{1}{2}$	2 1 $\frac{1}{2}$	2 11	2 3	2 3	2 3
Length of lines of grinders	1 0	1 0	1 4	1 0	1 0	1 0 $\frac{1}{2}$
Length of lower jaw	3 0	2 10	3 10	2 10	3 0	3 0 $\frac{1}{2}$
Width at ear bulla.....	1 9	1 9	2 1 $\frac{1}{2}$	1 10	1 10	1 11
Width of the condyles	0 11 $\frac{1}{2}$	.....	1 1 $\frac{1}{2}$	0 11 $\frac{1}{2}$	1 1 $\frac{1}{2}$	1 0

We have a skeleton of this species, which was purchased of Mr. Bartlett as "*the Square-spined, not Crested Porcupine*," but unfortunately the skin was not preserved.

I ought in justice here to remark, that Edward Gerrard, who has the preparation and the care of the skeletons in the British Museum collection, and Mr. Bartlett both informed me there were osteological distinctions between these very distinct species.

3. *ATHERURA*, Cuvier.

Tail elongate, tapering, ending in a tuft of peduncled, compressed spines. Skull elongate, rather suddenly narrowed in front, rather depressed and flattened above. The nasal moderate, not reaching to the front edge of the orbit. The intermaxillary rather narrowed behind, square at the hinder end. The malar bone broad in front, subtriangular, very narrow behind. The palatine foramen rather far apart, linear and rather diverging behind. The grinder subcylindrical. The upper front one with two large folds on the outer side, reaching nearly to the inner edge, and with a smaller fold on middle of the outer, and three similar folds on the hinder edge; the other upper grinder with two grooves or folds on outer edge, and one on the middle of the inner: these grooves become isolated, oblong rings of enamel as the teeth become more worn: the fold on the inner side of the last grinder is most distinct. Palate truncate behind.

1. *ATHERURA FASCICULATA*, Cuv.

Landak, *Marsden*, Hist. Sumatra. *Raffles*.

Hystrix macroura, *Linn.* From *Seba*.

Hystrix fasciculata, *Shaw*. From *Buffon*.

Inhab. Sumatra, *Raffles*; Malacca, *Buffon*; Celebes, *Seba*.

2. *ATHERURA AFRICANA*. *Ath. fasciculata*, "*Cuv.*," *Bennett*, *Garden and Menag. Zool. Soc.* 175.

Inhab. Fernando Po, Lieut. Vidal; Sierra Leone, Mr. Frazer.

Skull, without lower jaw, in collection of Zool. Soc.

	in.	lin.
Length of skull above	3	9
Length of nasal	0	11
Length of palate	2	2
Length of teeth-line	0	10
Width at orbit	1	3½
Width at zygoma beneath	1	9
Width of valve	0	4
Width at ear bulla	1	6½
Width of condyles	0	11

"The animals are found in such plenty (in the colony of Fernando Po) as to afford a staple article of food to the inhabitants."—*Bennett*, *l. c.* 175.

4. NOTE ON THE SPERMATOOZA, AND ON THE ELEVATOR MUSCLES OF THE PENIS, OF THE INDIAN ELEPHANT. BY GEORGE GULLIVER, F.R.S.

In the testicle of the elephant that died on the 7th of this month in the menagerie of the Society, there was scarcely any semen. The seminal tubes measured from the $\frac{1}{109}$ th to the $\frac{1}{85}$ th of an English inch in diameter; they contained a brownish pulpy matter, which, under the microscope, appeared to be composed of a liquid loaded with a multitude of minute, shining, oil-like molecules, either free or aggregated into roundish and shapeless corpuscles. There were also a few objects like altered epithelial corpuscles; but not a single spermatozoon, either free or in a cell, could be discovered.

Within the tube of the epididymis, however, a few distinct spermatozoa were found; and the drawing of them now shown is on a scale of $\frac{1}{4000}$ th of an inch, the objects being magnified between 700 and 800 times, linear admeasurement.

It will be seen that there is nothing peculiar either in the form or size of these spermatozoa of the elephant. They resemble generally those of numerous other mammalia. For the sake of comparison I exhibit drawings, made on the same scale, of spermatozoa from the *Cervidæ*, *Camelidæ*, *Ursidæ*, *Mustelidæ*, *Soricidæ* and *Sciuridæ*, all of which are noticed more or less in my papers in the Proceedings of the Society, July 26, 1842, April 11, 1843, and February 24, 1846.

The elephant was supposed to be about forty years old.

I may mention, that while engaged in looking for the testicles of the elephant, we exposed two large muscles arising from the pubes, and inserted into the dorsum of the corpora cavernosa penis. Each of these muscles was quite as large as the biceps muscle of the human arm.

The use of these muscles in the elephant, to elevate, retract and suspend his immense penis, is indicated by their attachments. Under the microscope the fibre of these muscles of the penis was found to possess all the characters of common voluntary muscle.

5. BRIEF NOTES ON THE HABITS OF NOCTILIO MASTIVUS.
BY P. H. GOSSE, ESQ.

The following notes are extracted from a journal kept in Jamaica during a residence there in the years 1845 and 1846:—

“Being out on a shooting excursion on the 18th of October, 1845, round Crabpond Point, on the southern coast, about the middle of the day I looked about for a seat on which to rest while I ate some refreshment. A gigantic cotton-tree (*Eriodendron anfractuosum*) in the grass-piece of Mount Edgumbe seemed to promise in its long root-spurs the seat I was seeking. On arriving at it I found the tree was hollow, the trunk forming a wide chimney of unknown height, as being closed at the top, the darkness prevented my seeing more than a few yards up. I remarked to my servant that it was a likely locality for bats; but the appearance of a large Gecko drew off my attention, and I attempted to capture it. The reptile darted

however within the cavity, and I then noticed that beneath the hollow was piled a heap, several feet in diameter, and at least a foot in height, of a soft granular substance, which on examination I found to be the dung of some insectivorous animals, with a very rank peculiar odour. I had now no doubt of the tree being the abode of bats, but had little expectation of being able to ascertain the fact. While peering carefully up, however, I distinctly heard the flapping of wings and some shrill squeakings, and this determined me to fire my fowling-piece at random up the cavity. This I did twice, and though I brought down nothing but a little rotten wood, yet presently, when the smoke had a little subsided, on looking up again I discerned amidst the darkness one or two heads, which seemed those of rats, and immediately another just above them, evidently crawling downwards. I pointed them out to my negro lad, who saw two or three more, and presently, as it became more clear of smoke, the whole sides of the cavity appeared full of curious round faces. I now fired, no longer at random, and had the pleasure of bringing down this beautiful bat, which fell dead. The smoke of this discharge made the others more anxious to come down to the fresh air, and we could see them descending fast, head downwards. As the shot lacerated the membranes considerably, I bethought myself of another plan: cutting a long switch with a few twigs at its extremity, I stood at the bottom and *whipped* one down; he came sprawling with expanded wings on the ground, apparently with but little notion of flight, although unwounded. On being taken up by the wings he displayed uncommon fierceness, biting savagely and powerfully anything within his reach. Three or four more I obtained in the same manner and brought home.

“When thrown up into the air in a room, they would not fly, but merely opened the volar membranes to break their fall, as with a parachute. Two, which I kept alive, hung themselves up by the hind-feet from the side of a cage into which I put them, and would not move, except to shift an inch or two; nor did the approach and arrival of night excite them to activity. One, however, which had contrived to secrete himself in the room, when, having taken both out of the cage, I turned my back for a moment, and which I had vainly searched for, I found at night, by going into the room with a candle: hearing a scrambling, I looked up to the top of the wall, where was my lost bat, endeavouring to suspend himself. On being touched he flew off, but immediately alighted, and so repeatedly; sometimes, when he failed of taking a hold of the wall, he came to the floor, whence he readily rose, though very obliquely. I was struck with his expanse of wing when performing his noiseless flight around the room, and with his resemblance to a bird, aided by the enormous interfemoral membrane, which being expanded by the hind-legs and *depressed*, looked like the broad tail of a flying bird, and appeared to guide the motion in like manner.

“While taking some drawings of one, as it hung from the immense hind-feet, I was amused to see how it would thrust its nose into every part of the volar membranes, apparently searching for para-

sites (of which several were briskly crawling among the hair); and now and then it brought down one hind-foot, and scratched itself with exactly the motion of a monkey; and once I observed, after scratching its breast, it delivered something into its mouth. The flexibility of the ankle-joint was extreme, so that the foot could reach with ease any part of the body.

"I presented to one a large cockroach, which he seized greedily and munched up, moving the jaws only vertically. The eating was attended with a loud and very harsh *cranching* of the teeth—not produced by crushing the horny parts of the insect, for it was equally perceptible when munching a bit of soft flesh. The jaws moved rapidly, but yet the mastication was a long operation, *for it appeared to me to be performed almost wholly by the canines*. As the insect was progressively masticated, portions were allowed to fall into the cheek-pouches (the one being pretty well filled before the other was used), which when full hung down on each side of the lower jaw, to the depth of three or four lines, like distended bags, displaying a warted surface. When the whole of one cockroach had been masticated, and deposited in the pouches, it would take another, which was gradually disposed of in the same receptacles; then, after a few moments' intermission, by a contortion of the jaw, aided by the motion of the muscles of the pouch, a portion was returned to the mouth, and again masticated. This was repeated till all was swallowed, and the pouches appeared empty and contracted up out of sight. The whole process was much like rumination. Small portions of the muscle of a bird, which were presented to one, he chewed up and deposited in the pouches; but after being regurgitated, and a second time masticated, they were expelled instead of being swallowed. The process of eating seemed an awkward one; it was a rapid succession of choppings with the long canines, through which the tongue was thrust about so nimbly that it appeared a wonder it was not impaled perpetually.

"In order to rest, like other bats they crawled upwards and backwards by means of the hind-feet, seeking the greatest elevation they could attain which afforded a hold for the claws. They were social, though both were males; usually hanging side by side, or sometimes with the leg of one crossing the leg of the other, or even one upon the other. Sometimes they brought their faces together, and licked each other's open mouths in a singular manner; and this appeared grateful to them. I did not hear either of them click or squeak.

"Pressed by numerous engagements, I was prevented from again visiting the tree until about ten days after. I then went thither in the afternoon, wishing to see the bats emerge for the night; but though I waited till after sunset, not one appeared. The next morning I smoked the cavity again, using the fumes of burning nitre and sulphur, but entirely without success. I hence inferred that they had deserted the tree as a dwelling on the first molestation. After some months, however, I again found it tenanted by the same species, if not the same individuals, and succeeded in obtaining another spe-

cimen, whose manners in captivity were identical with those recorded above.

"I have never seen the species abroad (so as to identify it), but my intelligent negro lad, Sam, observed two about noon on the 16th of April, the sun shining vertically. It was at a provision-ground at Belmont, where they were clinging to the limb of a young Avoçada Pear (*Persea*). A Banana-bird (*Icterus leucopteryx*) was flying towards them, apparently with the intention of pecking them, on whose approach they flew away in different directions. The lad did not perceive them until the very moment of separation and flight, but he noticed that they were in actual contact, though he could not tell their position. No hole or hollow tree was near. Could they have been *in copula*?"

I conjecture that it is the present species to which reference is made in the following paragraph, which appeared in the Salisbury Journal of February 6th, 1847:—"Mr. Thomas Dickon, an eminent farmer in Lincolnshire, had been induced to go to Jamaica, as manager of some extensive estates there, with the intention of introducing the best systems of farming where they had been hitherto unknown. Accounts have been received, that there is already every probability of a considerable increase of sugar being produced by applying a new guano as tillage. It is the dung of large bats. The bats are said to amount to myriads; and Mr. D. having observed many of these singular animals entering the crevices of one of the numerous rocks, caused an opening to be made and the place explored. The cave was found to be 250 feet long, 20 feet broad, and from 20 to 30 feet high. The interior contained thousands of these animals, and appeared to have been their dwelling for ages. At the bottom of the cave, bats' dung, at least four feet in thickness, and amounting to about 600 tons in weight, was discovered, and found to be equal to the best Ichaboe guano."

I sent a copy of the above notice to my esteemed friend Richard Hill, Esq., of Spanish Town, who thus replied: "I know Mr. Dickon, to whom your newspaper paragraph relates. He details his experience in the parish of Westmoreland [the same part of Jamaica as that in which my own observations were made.—P.H.G.]; I will however endeavour to ascertain the precise locality in which he had discovered his extraordinary colony of bats. The Council of the Royal Agricultural Society of Jamaica, of which I am a member, had had its attention called to the manure to be obtained from faecal deposits in caves frequented by bats, and they had analysed the material, but found it so largely charged with the comminuted wing-cases of insects, and so little acted upon by decomposition, that the azotized ingredients combined but slowly as a fertilizer. Several similar accounts were given to us of cave-deposits, to that furnished by Mr. Dickon. His discovery however being made in an unopened cavern, into which the bats had penetrated through crevices in the rock, has special recommendations to notice."

'My attention was some time ago drawn to a similar harbouring-

place of our *Cheiroptera*. One evening, as I was crossing the marshes between Spanish Town and Kingston, by the high-road, I was surprised at sundown at the sudden rushing out of a stream of bats from the face of a clifly hill that rises precipitously from the swamp. They continued pouring out for some quarter of an hour or twenty minutes; they stretched like a string for some hundred yards, in consequence of the one-by-one file in which they came forth from the crevice, and then dispersed themselves up and down and all about, covering the whole expanse of the contiguous marsh. The long highway perspective across the swamp; the level bed of rushes bending in wavelets to the evening wind; the distant mountains with beetling summits and broken declivities, lighted in angular patches by the setting sun, exhibited a wide, dilated and diversified scene, in which no object rose to interrupt the line made by the flitting swarms as they streamed out from the face of the cliff, and spread their myriad numbers over the plain. I have myself noticed the great depth of the rejectamenta of bats in these caverned recesses, but a great deal of it consisted of *undecayed down*, as well as faecal mutings, and undevoured fragments of insects.'

In a subsequent communication my friend favoured me with a sample of the excremental deposits from a bat-cavern on Swansea estate in the Vale of Luidas; and I forward it, with this paper, to the Zoological Society.

I close this article with a few particulars of description, some of which are better observed on the living animal than on specimens dried or in spirit. A male measured as follows:—"Muzzle to insertion of tail, $4\frac{1}{10}$ inches; expanse of volar membranes, $24\frac{3}{4}$; ear, from posterior base of tragus to tip, $1\frac{3}{20}$; ditto, from anterior base to tip, 1; tragus, longest side, $\frac{3}{10}$; shortest, $\frac{3}{20}$; nose to front angle of eye, $\frac{5}{10}$; nose to front of tragus, $\frac{1}{20}$. Colour varying; upper parts yellow-brown, more or less bright; a well-defined narrow line of pale fulvous runs medially down the back from the head to the tail; under parts pale fawn, bright fulvous or orange; face purplish; the muzzle and chin are much corrugated; face warty; the ears fall into elegant curves. The volar membranes are delicately thin, transparent and glossy; studded with minute, white, papillary glands, which for the most part follow the course of the blood-vessels, but are largest and most numerous in the vicinity of the trunk. The membranes being attached along each side of the spine, with an interval in the middle of the back of but $\frac{1}{10}$ ths of an inch, the body is, to a great extent, free. The wing, when at rest, has but a single fold, the ultimate joint of the second and third fingers being brought back upon the penultimate. The reproductive organs are large and prominent. At the base of the penis are two follicles, secreting a dark brown substance, dry and lumpy, but friable between the fingers, most insufferably musky, the odour from which is strongly diffused by the animal during life."

From the width of the gape, the length of the teeth, and the power of the jaws in this species, together with the ferocious eagerness with which my captive specimens snatched at large cockroaches, I

conjecture that its insect-prey is large; probably nocturnal beetles and the larger moths and sphinges.

July 13, 1847.

William Yarrell, Esq., Vice-President, in the Chair.

The following papers were read:—

1. OBSERVATIONS ON THE DISTINCTION BETWEEN THE CERVICAL AND DORSAL VERTEBRÆ IN THE CLASS MAMMALIA. BY H. N. TURNER, JUN.

Doubtless it will be remembered that in many Mammalia the last cervical vertebra has a transverse process of simple form, wanting the perforation for the passage of the vertebral artery, so characteristic of the remaining vertebræ in this region of the spine, and which, together with the absence of articulated ribs, has been considered as the definite character by which such a vertebra may be distinguished. However, it is now well known that the existence of this foramen in the transverse process of the seventh cervical vertebra is rather the exception than the rule among the mammalian class, since it is wanting in most of the lower Quadrumana, as the Cebi and Lemurs*, in nearly all the Carnivora and the Rodentia (except the Hares), in the Ruminantia, and several of the Pachydermata and Edentata; but as its presence or absence has but little importance either in a zoological or physiological point of view, it is needless to enter minutely into that question.

It is perhaps scarcely necessary to add, that in the six upper cervicals this foramen is formed by the existence of two exogenous processes, the diapophysis and parapophysis, and the junction of their extremities through the intervention of a small autogenous element, a pleurapophysis or vertebral rib, which becomes anchylosed to them, in the warm-blooded animals, at an early period of existence. One of the cervical vertebræ of a whale, described by Mr. Gray in a paper recently read, affords a very interesting example of the existence of

* As some of the exceptions to this generalization possess some interest, it is perhaps as well to notice them. We need not descend lower than the Chimpanzee to witness the disappearance of the foramen, as in this animal its existence is only indicated by a minute process thrown out from the transverse process, and another from the body of the vertebra, but they do not meet; this would render it most probable that the stylet enclosing the foramen beneath is exogenous. In the skeleton of a half-grown *Cynocephalus leucophæus* in my own collection, the foramen is wanting on one side; on the other it is very small, and the stylet enclosing it shows no trace of separation from the other parts. But the most remarkable peculiarity is that occurring in the Orang-Utan, whose neck is short, and usually hangs forward. In the skeleton of this species presented by Sir Stamford Raffles to the College of Surgeons, not only does the transverse process of the seventh cervical vertebra show no foramen, but even that of the sixth has it very small on one side and quite obliterated on the other. On the other hand, in the *Indri brevicaudatus*, a rather long-necked Lemur, the foramen is very distinct in the seventh.

both the processes, but without the little element which would unite their extremities.

In the seventh cervical vertebra the upper transverse process only exists, and the small rib is generally also absent. When the foramen is present in this vertebra, it appears to be enclosed beneath simply by the extension of a little osseous stylet from the under side of the diapophysis to the body of the vertebra, just as the neck of one of the true ribs extends between the points where its head and tubercle are articulated; but whether this stylet be autogenous or exogenous, that is, developed from a separate point of ossification or not, I have at present no means of ascertaining.

I was led to remark on this subject through the accidental discovery in the skeleton of a Polecat (*Mustela putorius*) of a pair of rudimental ribs, or rather portions of ribs, moveably articulated to the extremities of the transverse processes of the seventh cervical vertebra; their length is exactly one-fourth of an inch of true bone, besides a little cartilaginous appendage at the tip. In a second specimen I searched for a similar peculiarity, but was unable to perceive its existence. The two specimens were both males, of mature age and robust dimensions, resembling each other in every particular. This circumstance naturally led me to observe with considerable minuteness the skeleton of the Three-toed Sloth (*Bradypus tridactylus*), in which the existence of nine vertebræ anterior to those forming part of the thorax has long been known; and the discovery by Professor Bell of rudimental ribs articulated to the eighth and ninth of the series renders that exceptional instance additionally interesting. I therefore attentively perused the paper contributed by that learned naturalist to the first volume of the Society's Transactions.

It may indeed appear presumptuous on my part to dissent from the conclusions which so eminent a professor has drawn from his discovery, but my observations led me irresistibly to the conclusion, that if there is any essential distinction between the vertebræ of the cervical and dorsal regions, the eighth and ninth vertebræ of the *Bradypus tridactylus* must be classed among the former.

The skeleton upon which my notes have been made is that contained in the Museum of the Royal College of Surgeons; it must be perfectly mature, although the epiphyses at the distal extremities of the ulna and radius still remain distinct, for *every* other epiphysis has lost all trace of separation from the bone to which it belongs, and the characteristic ankylosis which unites most of the bones of the foot is completely effected. The sternal ribs are all perfectly ossified; the first four of them are ankylosed to their corresponding vertebral ribs, and the first one also to the manubrium sterni;—so small, comparatively, is the amount of respiratory action required by this slow-moving quadruped.

The differences existing between the eighth and ninth vertebræ and those immediately above them are most clearly and accurately described by Professor Bell; surely it can hardly be necessary here to quote his words; but on comparing either the description that he has given, or the skeleton itself, with the cervical vertebræ of almost

any other mammiferous quadruped, it is most easy to perceive that the *eighth* and *ninth* vertebræ of the Sloth differ from the other cervical vertebræ in precisely the same manner as do the *sixth* and *seventh* vertebræ of other Mammalia from those preceding them in the series. He observes, in describing the *eighth* vertebra, "In the first dorsal each transverse is completely divided into an anterior flattened process, which is turned forwards, and a true lateral or transverse one, which supports the little articulated rib. The transverse process is smaller, but considerably longer, than those of the true cervical, and stands more in a lateral or transverse direction." These characters are precisely the same, excepting that the little articulated rib is wanting, in the *sixth* vertebra of nearly all Mammalia, and in most of them still more distinctly and strikingly manifested. But in the excellent description given by the learned professor, one point at least has been omitted, and that is the existence of the foramen for the vertebral artery in the *eighth* vertebra of the Sloth: no doubt the coexistence of the same foramen in the upper vertebræ will account for its not being mentioned, but its presence tells strongly in favour of the cervical nature of the vertebra.

The transverse process of the *seventh* cervical of the Sloth, also so carefully described by Professor Bell, accords exactly with that of the *fifth* of other Mammalia, in presenting a character intermediate between that which precedes and that which follows it. In speaking of the *ninth* vertebra of the Sloth, he proceeds, "In the second dorsal vertebra the anterior processes do not exist, and the body assumes the form of the succeeding ones. The transverse processes are simple and obtuse, and the articular surface is slightly excavated." I have already pointed out the character presented by the seventh cervical in most Mammalia, which will be seen to agree well with that just cited of the ninth in the Sloth.

In the skeleton examined by myself, the upper pair of rudimental ribs, that is, those attached to the *eighth* vertebra, are wanting—no doubt accidentally lost, and therefore in no way influencing the present argument; but the second pair, attached to the *ninth* vertebra in a manner just similar to that which I have noticed as occurring abnormally in the Polecat, have contracted a complete ankylosis with the extremities of the transverse processes to which they are connected, thus showing, what it seems that Professor Bell's specimen did not exhibit, that this rib is not permanently moveable, but at some period of life becomes a fixture. The figure given by Professor Bell in illustration of his most valuable paper does not show any indication of the existence in the transverse process of the *ninth* vertebra of the foramen for the passage of the vertebral artery; but as this foramen is but small, and the position in which the figure is taken not a very favourable one for exhibiting it, it may nevertheless have existed in his specimen; the minute foramen which he mentions, "for the passage of intercostal vessels," must be one pierced in the rib itself. In the specimen which I examined however, we have the *ninth* vertebra presenting the foramen for the vertebral artery, enclosed, as I have already shown in the *seventh* of other Mammalia,

by a little osseous stylet extending between the under side of the transverse process and the body of the vertebra, imitating the neck of a true rib; and as this is coexisting with the rudiment discovered by Professor Bell, but here anchylosed with the end of the transverse process, it really presents the appearance of the upper portion of a true rib, merely having the neck a little thinner than usual. This circumstance may perhaps seem to weaken my position; but when I consider that this vertebra presents the same general characters as the *seventh* cervical of most Mammalia, where, although the rib be wanting, the foramen is generally wanting also; and also the existence of the rib together with the absence of the foramen in the Polecat, I think the balance of evidence will still be in my favour. And Professor Owen has shown to me, in the College of Surgeons' Museum, a preparation from the human subject, showing a pair of ribs articulated to the *seventh* cervical vertebra by head and tubercle, just as are those of the true dorsal series.

But it yet remains for me to notice one point of resemblance between the *ninth* vertebra of the Sloth and the *seventh* of other Mammalia, which seems to have escaped the scrutiny of Professor Bell: that is, that the body of the vertebra is not rounded beneath, as are those of the true dorsal series, but flat and square; this flatness resulting from the presence of a longitudinal ridge along each side of its under surface, and seeming to represent in a rudimental form the anterior flattened processes of the preceding vertebræ of the series, and whose absence, noticed by Professor Bell in the *ninth* vertebra of the Sloth, is equally characteristic of the *seventh* throughout the rest of the class.

At all events I think I have adduced, from the consideration of the mammalian class alone, proofs of that truth which other departments of Comparative Anatomy have before so well established, that Nature does not rigorously confine herself to those precise rules which we lay down to account for her phænomena; and also, that if we do find it necessary to subdivide the spine into distinct regions for convenience of description, we cannot do so by simply defining characters taken from the peculiarities of a single species, but must compare the characters which the vertebræ present throughout the scale of beings, to ascertain which of them are the most constant and most truly essential in their nature. We may at the same time perceive, that the same artificial subdivision of the spine which answers our convenience so nicely in one class, may be only partially, or not at all, applicable in another; since in Birds there are no lumbar vertebræ, and one vertebra partakes both of the dorsal and sacral character, while in Fishes we find no cervicals, and as ribs are appended to all those of the abdominal series, neither lumbar nor sacral vertebræ can be said to exist.

However, with regard to the distinction between cervical and dorsal vertebræ, as we see them in the class Mammalia, it follows, from the remarks which I have made, that we can define it neither by specifying any particular number as constituting the cervical series, nor by the presence or absence of articulated ribs, nor of a foramen in

the transverse process for the passage of the vertebral artery, but must diligently compare them with those of others of the class, to ascertain with which they really correspond in their essential characters; and then we may draw the line of demarcation wherever suits us best, only remembering that under whichever series we place a vertebra in one species, the corresponding one in another must be reckoned under the same category. This is the view I have endeavoured to carry out in my examination of the Sloth; and being of opinion that the *eighth* and *ninth* vertebræ of that animal correspond as essentially to the *sixth* and *seventh* in the rest of the class, as do the atlas and the axis to those of other animals, and knowing that the intervening vertebræ differ in number by two, I feel bound to believe, notwithstanding the interesting fact which Professor Bell has discovered, that the cervical vertebræ of the *Bradypus tridactylus* are nine in number.

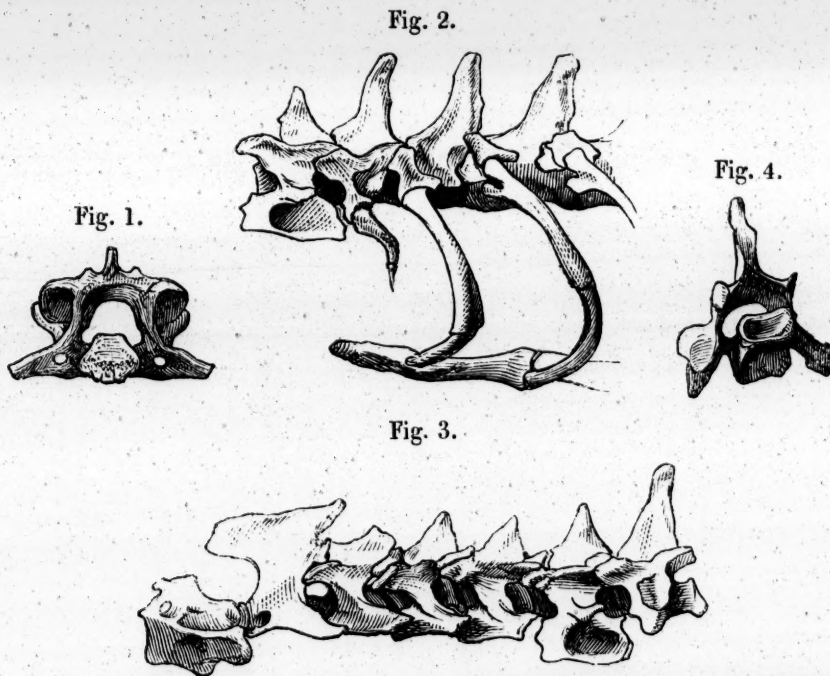


Fig. 1. A view from behind of the seventh cervical vertebra of an Opossum (*Didelphys Virginiana*), as an example of the existence of the foramen for the passage of the vertebral artery, and showing the manner of its enclosure beneath.

Fig. 2. The sixth and seventh cervical, and the first two dorsal vertebræ of a Polecat, showing the rudimental rib attached to the last cervical.

Fig. 3. The series of seven cervical vertebræ of a second specimen of the Polecat, showing the absence of the rib, and the *difference of form in the transverse processes*.

Fig. 4. A perspective view (from behind) of the last cervical vertebra of the same animal, showing the absence of the foramen for the vertebral artery, and the *flattened* form of the under surface of the vertebra.

2. DESCRIPTION OF A NEW SPECIES OF BAT. BY CHARLES LUCIEN BONAPARTE, PRINCE OF CANINO AND MUSIGNANO, ETC.

ARCTIBIUS FLORESII.

Sp. Ch.—Grey brown; beneath paler, with pale tips to the hair; two broad streaks on the face, and a narrow streak on the centre of the back, white. Arm-bone rather foliated, one inch four lines in length. Heel-bone very short. Second thumb-joint elongate, slender. Nose-leaf with a distinct central rib.

This new species inhabits the unexplored region of the Republic of Equatoria, which borders on the wilds of Brazil. It was collected there in company with *Anoura Geoffroyi*, *Phyllostoma nigrum*, and *Molossus ater*, by the intrepid traveller M. Delattre, from whom I received it through M. Bourcier, the eminent Trochilidist.

I dedicate it to our common friend the high-minded General Flores, the companion of Bolivar, and once the worthy President of the Republic, to whose civilization his thoughts are still constantly directed, and where he still occupies a distinguished place in the hearts of his fellow-citizens.

3. ON A NEW GENUS OF SUIDÆ AND A NEW SPECIES OF TAXIDEA.
BY B. H. HODGSON, Esq., CORR. MEMB. ETC.

Genus PORCULA, mihi.

Gen. Ch.—Teeth $\frac{6}{6} \cdot \frac{1.1}{1.1} \cdot \frac{6.6}{6.6} = 40$. Canines small, straight, severely cutting, but not exerted from the lips. Fourth toe on all the feet small and unequal. Tail very short, but distinct. Type,

PORCULA SALVANIA, mihi.

Sp. Ch.—Pigmy Hog of a brown-black colour, slightly and irregularly shaded with sordid amber. Iris hazel. Nude skin dirty flesh-colour. Hoofs glossy-brown. Length from snout to vent 18 to 20 inches; height 8 to 10 in.; head 6 in.; tail $\frac{7}{8}$ or less than 1 in. Weight 8 to 10, rarely 12lbs.

Hab. Saul Forest.

Remark.—The Pigmy Hog of the Saul Forest is almost equally allied to the true Hogs and the Peccaries, agreeing with the former in the absence of any peculiar organs, such as the gular flaps of *larvatus* and the pelvic sac of *torquatus* and *labiatus*; also in the number and form of the incisor teeth, and in having a perfect tail and four toes to each foot; but differing from the true Hogs and agreeing with the Peccaries in the number of the molar teeth, in the style of the lanianaries, in the diminished elongation of the jaws, and in the absence of the nasal cartilage, and showing yet further leaning towards the same type (*Dicotyles*) by the extreme smallness of the tail, and by the tendency of the fourth toe to disappearance.

Our proposed genus should have a place in a natural system between *Sus* and *Dicotyles*; its positive characters being the presence of a tail and of a fourth toe, the limited number of molar teeth, and

the straightness of the unexserted laniaries. The species is most rare; its flesh excellent; its manners resemble those of *Sus* in general, but with some marked differences.

Genus TAXIDEA, Waterh.

TAXIDEA LEUCURUS, mihi. Tibetan Badger.—Head laterally and above whitish, divided by a blackish line through the eye. Body above and laterally yellowish grey, paling towards the flanks. Below, from chin to vent exclusive, black; and limbs the same. Tail unmixed yellowish white. Ears black basally, white apically. Snout to vent 27 in.; head $5\frac{1}{2}$ in.; tail 10 in.; palma and nails $3\frac{1}{8}$ in.; planta and nails 4 in.; ear, with tuft, 2 in.

Hab. Plains of Tibet.

July 27, 1847.

William Yarrell, Esq., Vice-President, in the Chair.

The following papers were read:—

1. NOTE OF THE CIRCULATION OF *CROCODILUS LUCIUS*. BY
EDWARD FRY.

In a recent dissection of a specimen of the *Crocodilus lucius*, measuring about five feet four inches, I discovered an arrangement of the arterial system which is, as far as I am aware, anomalous, and which may perhaps be therefore worth recording.

In all the drawings of the Saurian circulation with which I have met, the left ventricle is represented as giving off, in addition to the right aortic arch, a common trunk, which divides into two arteries for the supply of the fore-part of the body, which for a short course are to be considered as arteriæ innominatæ, when they give origin to the subclavian arteries and pass upwards, one on either side, as carotids, for the supply of the head and face. In the individual in question, however, the arrangement was this: beside the right aortic arch, two trunks are given off from the bulbus of the left ventricle; of which, one passes immediately to the supply of the right fore-limb, and the other proceeds upwards, shortly gives off a considerable branch as a left subclavian, and then continues its upward course on the mesial line lying immediately on the under side of the bodies of the vertebræ, in a channel between the longitudinal muscles of either side, and above the trachea, until it almost reaches the posterior nares, where it subdivides, its branches passing over the under side of the temporal muscles, and going to feed the lower jaw, as well as supplying the sides of the head.

The parts which this singular artery supplies prove it to be the

analogue of the carotids, whilst the consideration of its origin, course and termination induces me to believe that its homological relation is with the inferior pharyngeal.

The absence of any such arrangement in the whole subkingdom of the Vertebrata is to be remarked; and in conjunction with the fact that the figure of the Saurian circulation given in Müller's 'Physiology' (by Baly, vol. i. p. 174) is stated to be from an individual of the same species, viz. *Crocodylus lucius*, induces me to suppose the anomaly above recorded to have been an individual peculiarity.

2. ADDITIONAL OBSERVATIONS ON THE CETACEA OF THE BRITISH ISLANDS. BY J. E. GRAY, ESQ., F.R.S. ETC.

1. Since my former paper was read, I have been enabled, by the kindness of Professor Goodsir, to examine the specimens of Cetacea which were prepared by Dr. Knox, and which now form part of the anatomical collection of the Edinburgh University.

The large male whale which came ashore on the 5th of October 1831, and was seventy-eight feet long, which Dr. Knox in his Catalogue calls *Balæna maximus borealis*, and of which he made many most interesting preparations of the soft parts, is one of the most beautiful and perfect skeletons I have yet seen. The latter is for the present exhibited in the elephant-house at the Zoological Gardens of Edinburgh, but unfortunately it is suspended so high that I could not take any measurements. It is a *Physalus*, very nearly allied to what I have called *Physalus antiquorum*; but it differs from the specimen taken at Plymouth in the lateral processes of the cervical vertebræ being higher compared with their length, and more truncated at the end; in the third and fourth cervical vertebræ not being so much expanded beyond the aperture; in the fifth being still thinner; and in the sixth, instead of a complete ring, having only an elongated, arched, upper lateral process, and a very short, rather depressed lower one; and the seventh only an upper one. Should this species prove distinct, it might be distinguished as *Physalus borealis*.

Dr. Spittal, who saw it when first cast ashore, informs me it was slate or grey, and the tail white (probably beneath). The baleen appeared at the distance black.

2. In the anatomical museum there is the skeleton and soft part of a Dolphin or Bottle-nose, which was sent to Dr. Knox from Orkney in May 1825. It was a female and weighed fourteen stone. It is described in Dr. Knox's 'Catalogue of the Anatomical Preparations of Whales,' Edinburgh 1838, as No. 84, *Delphinus Tursio*.

It is a nearly adult specimen of *Delphinus leucopleurus*, lately described by Rasch, Mag. Zool. 1843, p. 369, from a specimen taken at Christiania in Norway, figured by me from a Norwegian specimen in the 'Zoology of H.M.S. Erebus and Terror,' under the name of *Lagenorhynchus leucopleurus*.

Dr. Knox gives the following measurements: entire length 9 ft. 6 in.; circumference 3 ft. 2 in. Pectoral 10 inches long; tail 1 ft. 2 in. wide; and the gape 9 inches.

It is a most interesting addition to the British fauna, being the second of this genus added within the last year.

3. I may remark, that *Balæna minor borealis* of Dr. Knox in the same collection is the *Balænoptera rostrata* of my papers.

4. In the same collection there is a stuffed skin of a fœtus of a Northern or Right Whale (*Balæna Mysticetus*), two feet four inches long, showing the large flap near the edge of the lower lip, "destined to cover in the baleen," and a most beautiful skeleton of the same specimen. The bones of the head are distinctly ossified, but the rest of the skeleton is only cartilaginous. There are also (No. 36) "the teeth of the fœtal *Mysticete* preserved in alcohol;" and Dr. Knox observes, "they never cut the gums, but become gradually reabsorbed," which agrees with Professor Eschricht's account of the teeth of *Megapteron*; and further, Dr. Knox remarks, "The integumentary system furnish the baleen, which is evidently a modified form of hair and cuticle." (p. 22.)

5. I may here add, as determining the synonyma, that the *Phoca Leopardina* of Professor Jameson in Weddel's 'Voyage,' from the specimen preserved in the museum of the Edinburgh University, is the same animal as I described under the name of *Leptonyx Weddellii*, figured in the 'Zool. Ereb. and Terror.'

A fœtus extracted from a specimen of the Pilot Whale (*Globiocephalus Svieval*) was six feet long.

In *Lagenorhynchus leucopleurus* the first, second and third cervical vertebræ are united by their spinous process, the rest free.

In *Globiocephalus Svieval* the second and third cervical vertebræ are united, the rest free.

In *Monodon monoceros* the second and third cervical vertebræ are united by the spinous process, not by the body, and the rest are free.

In *Delphinus Tursio* the atlas and the second cervical vertebra are united by the body, the spinous and lateral processes, and the rest are free and thin.

There is a perfect specimen of *Hyperoodon latifrons*, brought from Greenland by Capt. Wareham, in the museum at Newcastle, rather smaller (seven feet long) than the one from Orkney in the British Museum. There is the skeleton of an adult *Hyperoodon* from the Firth of Forth in the anatomical museum of Edinburgh University with the skull sixty inches long; the crests are very thick, but quite separate, and with flat perpendicular walls on the inner side.

There is another skull of the same species, from a specimen stranded on the coast of Lancashire, in a garden near Newly Bridge.

3. DESCRIPTIONS OF NEW OR LITTLE-KNOWN CRUSTACEA IN THE COLLECTION AT THE BRITISH MUSEUM. BY ADAM WHITE, F.L.S., MEMBER OF THE ENT. SOC. OF STETTIN, AND ASSISTANT IN THE ZOOL. DEPT. BRIT. MUSEUM.

Family MAIADÆ.

XENOCARCINUS, White, Appendix to Jukes's Voyage of H.M.S. Fly.

Carapace long, narrow, knobbed above, with a very long thick beak; beak cylindrical, horizontal, forming an elongated cone, truncated at the end, with two small spines at the very extremity, one on each side. Inner antennæ thickish, inserted in a deep groove, which is triangular in front. Eyes with a short thick pedicel. Outer antennæ springing from the under side of beak just in front of the eyes, eight- or nine-jointed; the first joint elongated, somewhat bent, the second not half its length; both furnished at the end with two or three longish setæ; the other joints forming a bristle. The outer pedipalps together occupying a square space; first joint very narrow at the base, the inner edge finely serrated; second joint very long, sides almost parallel, the end gradually pointed; third joint somewhat pyriform, with a tooth at the tip.

Legs cylindrical, some of the joints slightly curved; claws long, slightly curved, the inner edge with many closely-placed minute teeth.

Tail (of female) trapezoidal, hollowed in the middle; the segments, excepting the terminal, joined in one piece.

A genus closely allied to *Acanthonyx*, Latr.

XENOCARCINUS TUBERCULATUS, White.

Carapace with nine tubercles above, placed in three transverse lines, the centre one of the first line double, one placed before the other; the centre one of the third line also double; the two placed transversely; the greater part of the beak covered with minute closely-placed hairs and scales; two short lines of longer hairs on the upper side above and before the eyes; two or three waved longitudinal red lines on the posterior half of carapace, the inner one continued to before the eye.

First pair of legs (in female) short, not reaching to the end of the beak; the claws small, equal, and minutely toothed.

Hab. Long Island, Cumberland Group, Australia. Caught in a seine. Presented to the Museum by J. B. Jukes, Esq., geologist attached to the survey of H.M.S. Fly.

This very interesting form is described in the Appendix to his Narrative of the Voyage. It will be figured in the forthcoming Crustacea of the South Seas, in connexion with Sir J. C. Ross's Voyage.

CHORINUS ACANTHONOTUS, Adams and White, List of Crust. in Brit. Mus., Appendix, p. 123.

Carapace armed with four long spines, the two front ones rather close together at their bases, and directed a little forwards; the two hinder bifid; the forks of the anterior hinder spine diverging laterally, and those of the posterior divaricating longitudinally; three spines on each branchial region, the *anterior* pointed forward, flattened horizontally; the *middle* slender, curved backwards, upwards and outwards, with two sharp-pointed tubercles at its base directed downwards; the posterior with two divaricating slender spines directed backwards, outwards and upwards. Horns of the rostrum

long, flattened, close together at the base, gradually diverging, and curved downwards. Orbital margin armed at its superior part with a long bifid spine; on the *anterior* part having a short bifid spine, and on the *posterior* part bounded by a short spine curved forwards. Inferior margin of the orbit nearly wanting, and its external angle ending in a short sharp tooth-like process. The first pair of legs armed both above and below with a trenchant denticulated crest; the other legs cylindrical, and furnished with two long sharp-pointed spines, situated one on each side of the upper part of the extremity of the *third joints*, and diverging upwards and outwards. Tarsi long, curved, and smooth below. Body covered with long thin hairs.

This species differs from *Chorinus aculeatus* (Edwards, Hist. Nat. des Crust. i. p. 316, and De Haan, Fauna Japonica, pl. 23. fig. 2) in the length and position of the spines, which are not tipped with a knob, but sharp-pointed, and in the thin joints of the posterior pairs of legs being armed with two spines. The peculiarity of the long bifid spine above the orbit must also be regarded as a singular characteristic; the front legs are more slender, the horns of the rostrum are longer and less divaricating than in *C. aculeatus*.

Inhabits Eastern Seas; Borneo (Unsang).

The above description was drawn up by Mr. Arthur Adams, Assistant-Surgeon to H.M.S. Samarang. A figure will be published in the forthcoming illustrated work on the zoological results of that voyage, which in the orders Mollusca and Crustacea are particularly striking.

I may remark that the above species enters into *Chorinus* of Prof. Edwards and Dr. De Haan, but seems to me to be very different from *Chorinus* of Leach, founded on a West Indian and South American type.

ZEBRIDA, White.

Carapace flattened, and about as broad as long. Front horizontal, slightly bent down, and formed of two flattened spines, conical, directed forwards, and slightly diverging at their tips. The orbits circular; the peduncle of the eyes very large and thick, broader from side to side than from above downwards; the cornea of the eyes projecting beyond the outer margin of the front, nearly filling up the orbital cavities, the upper margins of which are salient. The latero-anterior borders of the carapace armed with a single, strong, flattened process; conical, trenchant, broad at the base, their outer edges slightly elevated, with their points curving forwards. The first joint of the external antennæ is very large, long, cylindrical, and the antennæ are covered by the rostrum. The epistome is very nearly similar to that of *Acanthonyx*. The chelæ, shorter than in that genus, are armed with flattened, conical, slightly obtuse spines. The second joint triangular, with an external and internal conical spine, the external very long and directed upwards and forwards; the *third joint* armed with three spines; one superior posterior, and directed forwards; two anterior lateral, and directed outwards and rounded at their extremities; the fourth joint is crested with a sharp flattened

spine. The legs are short, thick, very much compressed; the third joint has two large, flattened, conical spines on the front, directed forwards; the fourth joint has but one flat spinous process on its anterior part, and the fifth joint enlarged and furnished posteriorly with a sharp, flat, curved spine directed backwards.

This beautiful genus is very apathetic when alive; in that respect, according to Mr. Adams's observations, resembling *Lambrus*. In the system it is not far removed from *Acanthonyx* and *Huenia*. *The description is from a female.*

ZEBRIDA ADAMSII, White, List of Crust. in Brit. Mus. p. 124.

In colour this species is of a light delicate pink, with dark liver-coloured markings. There is a central line bifurcated anteriorly, where it is lost on the inner bases of the horns of the rostrum, and reaching posteriorly to the last joint of the abdomen, and having external to it a fine, double, somewhat waved line. Extending from the apex of the rostral spines, and meeting at the last abdominal segment, are two broad lines, narrowed in the middle of the carapace; external to this is a fine double line, and on the outside of this is a broad somewhat curved stripe, ending abruptly at the postero-external angle of the carapace; and at the base of the antero-lateral spines is another rather broad linear mark, of the same dark liver-colour.

The third joint of all the legs has two broad, dark, red-brown bands, directed somewhat diagonally across the joint; the fourth and fifth joints have one broad mark of the same colour. The under surface is of a somewhat darker colour. On the outer part of the abdominal segments is a round dark spot. The entire surface of the animal is smooth, hairless, hard, polished and porcellaneous. Eyes black.

A very distinct variety, from about twelve fathoms, in the Sooloo Seas, had the carapace of a light green, with deep red-brown stripes, and the legs and chelæ of a pearly semi-opaque white, and very distinctly banded with deep red-brown.

The specimen from which the foregoing description is taken was dredged from a sandy bottom at about six fathoms water, near the mouth of the Pantsi River, on the coast of Borneo. The description, it ought to have been remarked, was derived by Mr. Adams from a living specimen; but even the dried individual in the Museum collection is very distinctly marked.

Family PAGURIDÆ.

PAGURUS STRIGIMANUS, White.

Red, irregularly spotted with yellow. Eye-peduncles longish, not the length of the anterior margin of the carapace. Carapace with the front part irregularly pitted above, very smooth in the middle, the sides with tufts of long yellow hairs. First pair of legs not much thickened; on the outside covered with thickly-set tubercles, many of which end in a spine; the base of these tubercles in front furnished

with a tuft of longish yellow hairs; inside of the hand and of the moveable claw with several slightly raised patches, covered with regular parallel deepish grooves; the claws black, and slightly hollowed at the end; the second and third legs with the two last joints furnished with many small black spines and tufts of long yellowish hairs.

Hab. Van Diemen's Land. From Mr. Gunn's collection.

A species somewhat allied to *Pagurus guttatus*, Oliv.

PAGURUS COMPTUS, White.

Whitish, the antennæ ringed with red; the legs with three or four broad red bands. Carapace smooth, with a few punctures on the side, between which and the middle is an impressed somewhat curved line; the front edge with a very wide tooth in the middle.

First pair of legs irregular; the left hand much smaller than the other; the palmar portion of the larger hand somewhat flattened on the outside, and covered with small depressed warts; the claws short and thick, the edges of the claws sharp; the second and third pairs of legs thin, smooth, slightly punctured with a few short bristles; the fourth and fifth legs very smooth.

Hab. Falkland Islands (Antarctic expedition).

PAGURUS CAVIPES, White, List of Specimens of Crustacea in Brit. Mus. p. 60.

Eye-peduncles short and thick; eye very large; scale at the base large and serrated at the end. Carapace with two widish teeth in the front edge, between the outer antennæ and eyes; a transverse groove near the front edge, the anterior angle with a few short spines; anterior legs with the left the larger; the wrist tubercled; the hand behind the moveable claw tubercled; the outer edge of the moveable claw and lower edge of hand serrato-dentate; outside of hand smooth, inside with a few tufts of shortish hairs; the smaller claw with several rows of hairs in tufts. The second and third pairs of legs somewhat serrated on the upper edge; the third leg on the left side with the penultimate joint longitudinally grooved on the outside; the next joint angled and somewhat excavated above, near the upper edge, which is sharpish and somewhat serrated.

Hab. Bramble Key, Australia. Presented by J. B. Jukes, Esq.

Family THALASSINIDÆ.

GEBIA HIRTIFRONS, White.

Beak above depressed, with six or seven longitudinal rows of small tubercles, furnished at the tip with tufts of hairs; stomachal region smooth; false natatory appendage large and ciliated.

Hab. South Seas (Antarctic expedition).

The only specimen which I have seen appears to be very young, as the crust seems hardly formed. It is closely allied to the *Gebia stellata*.

Family ASTACIDÆ.

ASTACUS ZEALANDICUS, White.

Carapace smoothish; beak as long as the peduncle of the outer antennæ, wide, depressed, with a slight keel near the base; the edges thickened, and with five or six small denticulations. Hands somewhat compressed, the outer and inner edges spined, the spines of the inner edge the longer; the hand with many longitudinal rows of hairs in tufts; wrist with three spines on the inner edge, and a deepish groove above; the caudal plates all of a crustaceous substance; the upper side with many small tufts of depressed hairs.

Hab. New Zealand.

Found by the late Mr. Percy Earl, who collected this and many other objects of natural history now in the British Museum. The *Dendrobax Earlii*, White, a very interesting Lamellicorn Beetle, allied to *Ryssonotus* and *Lamprima*, but with much of the aspect of an *Oryctes*, was named in compliment to him in the "Insect Fauna of New Zealand," published in one of the numbers of the 'Zoology of H.M.S.S. Erebus and Terror.' Much was expected from him; but he was drowned in a lamentable shipwreck off the Australian coast.

It is distinct from any species described by Prof. Milne Edwards, Dr. Erichson of Berlin, or Mr. Gray in the 'Appendix to Eyre's Central Australia,' published in 1845.

Family ALPHEIDÆ.

ALOPE, White.

Carapace very wide, dilated on the sides behind, and sinuated in the middle. Beak short, serrated above, buried in a deep groove, which has a spine on each side in front, almost reaching to the tip of the beak. Eyes with a thick short peduncle, situated in a hollow spine on each side, the outer spine shorter than the inner, which, as has been said, is on the side of the beak.

Inner antennæ thick and elongated; second joint much longer than the third, which is slightly cloven at the end and has two terminal styles, the one very long and cylindrical, the other short and compressed.

Outer antennæ situated outside the inner; the lamellated appendage elongated, longer than the thickened basal joints, the last of which has a tuft of hairs at the end; the terminal fillet very long, half as long again as the whole body. Outer pedipalps very large, nearly equal in breadth throughout; from the base nearly as long as the body; first joint the longest, nearly reaching to the end of the lamellated appendage of the outer antennæ; third joint more than twice the length of the second, compressed, blunted at the end.

First pair of legs two-clawed, thickish, extending a little beyond the second joint of the outer pedipalps; the second pair of legs filiform didactyle; third, fourth and fifth pairs of legs thicker than the second, monodactyle; claws large, serrated below.

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Abdomen largish, middle plate of tail with two pairs of small spines, the first pair beyond the middle.

This genus is allied to *Pontonia*, Latreille, but may be distinguished at once by the foregoing characters.

ALOPE PALPALIS, White, List of Crust. in Brit. Mus. p. 75.

The tail has a pinkish hue.

Hab. New Zealand. From the collection of Mr. Earl.

Family ERICHTHIDÆ.

ALIMA APHRODITE, White.

Carapace somewhat narrowed in front, deeply sinuated behind; the frontal horn not quite the length of the carapace; the posterior angles of carapace not much extended. Abdomen more than twice the length of the carapace, exclusive of frontal horn; penultimate joint of abdomen with two spines in the middle behind; middle lobe of tail notched in the middle with a gentle sinuation between the notch and the posterior angle, which is very sharp; the posterior edge is furnished with many short regularly placed teeth, giving it a fringed appearance; outer lobes of tail with the middle appendage prolonged into a sharp spine. Anterior pair of legs quite simple.

Hab. South Seas. Antarctic expedition.

Order AMPHIPODA.

Family GAMMARIDÆ.

EPHIPPIPHORA.

Head rather large; antennæ distant from each other, the upper pair with the basal joints very thick and corneous, inserted in a deep notch in front of head; two setæ at the end of each, the outer the thicker. Lower pair of antennæ with the basal joint somewhat elongated and furnished with hairs.

Body much compressed, the lateral appendages on the first eight joints very large, and nearly concealing the legs; the appendage of the fourth joint much dilated behind at the end; eighth to eleventh joints slightly keeled on the back; appendages of the three last joints of the abdomen longish, with short spines on the edge behind.

A genus allied to *Orchestia* and *Talitrus*.

EPHIPPIPHORA KROYERI, White, List, p. 130.

The body is very highly polished, the edges of the segments behind somewhat tinged with yellow; the legs and caudal appendages slightly brownish.

Hab. Van Diemen's Land.

Named as a small compliment to the very eminent Danish naturalist, whose researches among the less studied orders of Crustaceæ are so well developed in his published but not easily accessible works. I regret that, excepting a few foliated plates of the large 'Voyage

en Islanda,' &c., I had not seen any part of them when I prepared the 'List of Crustacea in the British Museum.'

APTERA?

Family PYCNOGONIDÆ.

NYMPHON JOHNSTONIANUM, White.

Head with a distinct neck thicker than the articulations between the leg. Eyes two, situated above the insertion of the chelicera, on a rather elevated tubercle, which is pointed at the end. Beak springing from the under side of the head, rounded but not knobbed at the extremity, rather thicker in the middle, with two scales on each side at the base, the extreme apex with a triangular depression.

Chelicera longer than the beak; the two basal joints longer than the third, which is slightly thicker and covered with short hairs; the end with two sharp claws meeting nearly throughout their entire length.

Palpi filiform, 10-jointed; four basal joints small, fifth twice the length of the fourth, and thicker than the sixth, which is equal to it in length; sixth to tenth short, the three last somewhat hairy at the end.

Thorax very narrow, smooth.

Legs eight, slightly hirsute; second and third pairs rather longer than the first; the fourth the shortest; each of the joints with some points at the end.

Tarsi with the first joint very short, the under-side of the second with many spines; claws two, one smaller than the other.

Abdomen somewhat elongate, most slender about the middle, extending to beyond the middle of the second joint of the leg from the base.

In size and general appearance at first sight resembling *Decolopoda australis*, Eights. Boston Journ. Nat. Hist. i. 204. t. 7, but differing from it in the number of the legs, structure of the head and claws, &c.

Hab. South Seas. Capt. Sir E. Belcher, R.N.

This herculean species is named after Dr. George Johnston, of Berwick-upon-Tweed, who among his many valuable works has monographed the British *Pycnogonidæ*. I am aware that Mr. Goodsir has named a *Nymphon Johnstonii* after him, but most probably the present species will be found to form the type of a new genus.

NYMPHON PHASMA, White.

Head with a longish neck, the greater part of which is as thin as or thinner than the articulations between the legs, thickened in front.

Beak thick, blunt, and somewhat knobbed at the end.

Eyes two, situated on a sharp-pointed tubercle, placed between the first pair of legs, somewhat in front of insertion.

Chelicera somewhat longer than the beak, thick, two-jointed; second joint rounded, furnished with two claws which meet throughout.

Palpi elongated, filiform, 10-jointed; three basal joints small; fourth joint very long; fifth joint shorter than the fourth, with a slight hook at the end; sixth joint about the same length as the fifth, but without hook at the end; four last joints short, somewhat curved.

Legs eight, somewhat hirsute, the third leg perhaps shorter than the others.

Tarsi with one claw, the under-side furnished with many small spines.

Hab. South Seas. Capt. Sir Edw. Belcher, R.N.

This may possibly be the other sex of the preceding. Neither of them have any trace of oviferous legs.

ADDITIONAL OBSERVATIONS ON CHITONES. BY J. E. GRAY, ESQ.,
F.R.S. ETC.

Since the publication of my former paper I have continued my researches on these animals, and now propose to add four groups to those which I then described: three of these genera were proposed as sections of the genus *Chiton* in my former paper, but I have since found that they each present peculiar modifications in the structure of the plate of insertion of the valves; and the other is a genus which I had overlooked, though founded on two of the English species of the family. On re-examination I think that the genus *Chiton* should be confined to the species which have a single notch on the plate of insertion of the central valves, and the edge of the plate of insertion pectinately lobed, which is the case with the species marked as belonging to the section * and ** p. 66, except *Chiton Barnesii* and *Ch. evanidus*.

1. RADSIA.

Posterior valve entire; margin covered with regularly-disposed imbricated smooth scales; margin of insertion of the central valves pectinately divided, and each furnished with two notches.

Radsia Barnesii. *Chiton Barnesii*, Gray.

2. CALLOCHITON.

The valves keeled, the hinder valve entire; the plates of insertion rather short, thick, of the terminal valves divided into many, and of the central valves into four bifid lobes. Margin with imbricate scales.

* *Margin with lanceolate, elongate, erect, closely-pressed scales.*

Callochiton lævis. *Chiton lævis*, Mont., Lowe, *Z. Jour.* v. t. 5, f. 1. *Ch. discors*, Maton & Racket. *Ch. punctulatus*, Maton. *Ch. septem-valvis*, Mont. *Ch. corallinus*, Risso.

** *Margin with ovate imbricate scales.*

Callochiton evanidus. *Chiton evanidus*, Sow. *Ill.* f. 139.

3. ISCHNOCHITON.

Valves thin; posterior valve entire; the plates of insertion very thin, smooth-edged, of the central valves each with a single notch; margin covered with very small imbricate scales.

* *Scales of mantle transversely grooved.*

Ischnochiton textilis. *Chiton textilis*, Gray = *Ch. longicymba*, Blainv.

Ischnochiton limaciformis. *Chiton limaciformis*. West Indies.

Ischnochiton Magdaliensis. *Chiton Magdaliensis*, Hinds.

Ischnochiton alatus. *Chiton alatus*, Sow. Philippines.

** *Scales of mantle minute, granule-like.*

Ischnochiton marginatus. *Chiton marginatus*, Mont. *Ch. cinereus*, Lowe, Z. J.

4. LEPTOCHITON.

The valves rounded, thin; posterior valve entire; the plates of insertion rudimentary, without any notches on either the terminal or central valves. Mantle covered with granular scales.

Leptochiton cinereus. *Chiton cinereus*, Montague = *Ch. asellus*, Lowe, Zool. Jour. var. white, *Chiton albus*.

Leptochiton Hanleyi. *Chiton Hanleyi*, Bean.

Leptochiton cajetanus. *Chiton cajetanus*, Poli. *Lepidopleurus cajetanus*, Risso.

Should the form of the plates of insertion of any specimen not be sufficiently seen, they may be easily made visible through the inner side of the mantle by their being soaked a few hours in a weak solution of caustic potash, but care should be taken that they are not left too long in soak, nor the solution be too strong, otherwise the margin will be dissolved. But should the valves be wished to be kept separate, this is the best way of separating them, as the plates of insertion are cleaned, and not broken, as they are likely to be if taken from the mantle. I may remark that the number of notches in the plates of insertion is sometimes, but as far as I have observed, very rarely, liable to variation; in one specimen of *Chiton Bowenii* I have observed that the plate of insertion of the last valve but one has two notches on one side, but the normal single one of the genus on the other.

The Meetings of the Society were then adjourned to
November 9th.

Nov. 9, 1847.

W. Yarrell, Esq., Vice-President, in the Chair.

A communication was read from M. Dolmatoff, Master of the Imperial Forests in the Government of Grodno, which gave an account of the capture and partial domestication of the young Aurochs recently presented to the Society by His Majesty the Emperor of Russia.

The Secretary informed the meeting that this paper had been transmitted through Sir Roderick I. Murchison, to whose influence and exertions the Society were chiefly indebted in the acquisition of this most important addition to the collection. The first letter addressed to the Council by Sir Roderick, announcing the intention of His Majesty, bore date Feb. 10, 1846, and from that period to the present he had been in communication with His Excellency Count Kisselef on this subject. The Secretary regretted, in common with his colleagues, and he believed the whole of the Society, that the absence of Sir Roderick on the Continent had hitherto prevented him from witnessing the successful result of his good offices, or even of receiving an official communication of the thanks of the President and Council, which, it was almost needless to say, awaited his return in the most cordial and expressive form.

The other papers read were :

1. ADDITIONAL NOTE ON A PAPER ON PORCUPINES (*supra*, p. 102).
By J. E. GRAY, Esq., F.R.S. ETC. ETC.

In my former paper I was unable to give the country of *Acanthion Cuvieri*. Mr. Frazer has since brought a skull and two living specimens of this species from Algiers; the latter are now in the Gardens of the Society, and Mr. Whitfield has brought others from the Gambia. In the number of the Journal of the Asiatic Society of Calcutta for August 1847 just arrived (p. 772. t. 32), I observe that Mr. Hodgson has described a new species of Indian Porcupine under the name of *Hystrix alopæus*, called *Ancholia* by the natives, which is certainly an *Acanthion*, and most probably my *A. Hodgsonii*; if so, the latter name will have the priority, as having been published in July.

2. A LIST OF THE GENERA OF RECENT MOLLUSCA, THEIR SYNONYMA AND TYPES. BY J. E. GRAY, ESQ., F.R.S. ETC.

The generic names which have been used in Mollusca have become so numerous that I have long thought it desirable that they should be submitted to a rigid examination, for the purpose of reducing those which are only synonyms of genera already established; and for the purpose of doing so with justice to previous writers, it is necessary that attention should be paid to the dates of their original publication, which have been too much neglected by several writers in this branch of zoology.

I have therefore sent to the Society the following list, which, though I have paid great attention to the subject, I am aware is yet very imperfect, as a commencement in what I consider the right direction, and I hope that it may be the means of drawing the attention of other students of this class of animals to the subject. I have been induced to send it in its present state, as I am constantly requested by both English and continental conchologists to supply them with copies of the Synopsis of the British Museum for 1838, 1840, 1842, and 1844, which contains a list of the genera of Mollusca, and which is now out of print, and also often to give them information with regard to the authorities for the several genera contained in that list, which shows that there is an evident want of some recent information on this subject.

It is needless for me now to dilate on the importance of attending to the law of priority, which I have always advocated, for that is now almost universally allowed; yet I am quite prepared for hearing several conchologists complain of the changes which the observance of this just law will force them to make: thus *Cyclostoma* and *Helicina*, instead of being applied to land-shells, must be the names of the *Delphinula* and *Rotella* of Lamarck's 'Histoire'; *Terebellum* that of *Turritella* of the same author; so that though these generic names are still used, they will have a different signification to their present one. Other names in very general use, as *Oliva*, &c., will have to be erased from the system, for this genus was established and well-characterized under the name of *Strephona*, by Browne (along with several other genera), between the publication of the tenth and twelfth editions of Linnæus's 'Systema Naturæ,' though it has been overlooked by Lamarck and other authors.

I may here observe that the change with respect to *Cyclostoma* and *Helicina* is produced by Lamarck having used the same names with very different significations in his 'Système' and 'Histoire.' In the latter of these works he has in one or two instances altered the names which he had previously given to a genus; and in like manner allowed the names before used, such as *Meretrix* and *Donacilla*, to drop out of the system, no notice being taken of the change or its cause.

The method I have followed is to observe the first name given to the genus and the type on which it was founded, and then to accumulate the synonyma around the genus. Where a succeeding author has referred to a different species as the type of the genus, I have

given the name in a new line, as at some future period that type may be proved really to belong to a different genus; and when any succeeding author has established a genus on any species which appears to belong to the before-established genus, it is in a similar manner placed under the proper head, with the synonyma belonging to that type. The type on which the genus or subgenus, as it may hereafter prove, was founded, is also given, so that if such type at some future period prove to be distinct from the one under which I have placed it, the synonyma of the genus will be at once seen. But the names which occur under each head are, according to my present views, to be regarded as synonyma of the genus under which they are arranged.

In respect to Lamarck's 'Système,' De Montfort's 'Conchology,' Megerle's 'Essay,' Schumacher's 'New System,' Blainville's 'Manuel,' and other works which only give the genera, and simply mention one or two examples as the types of their genus, the species they give as types are here cited; but in works like Linnæus's 'Systema Naturæ,' and Lamarck's 'Histoire,' which give the species of Mollusca, it is not so easy to determine which species the author intended for the type of his genus. In these cases I have chosen either the best known species, or, if the author has given figures, the species which he has figured; the latter is the course that I have adopted with respect to Risso's work, whose genera are so difficult to understand.

In the Linnæan genera in which there is room for doubt, from the miscellaneous character of the species referred to by the author, I have considered the name as restricted to the type which the earliest author after Linnæus has quoted for it: thus as Montfort quotes *Trochus niloticus* as the type of *Trochus*, and Lamarck *Chiton gigas* as the type of *Chiton*, I have regarded these species as the types of the Linnæan genera. This has not been done without consideration, as I was at first inclined to regard the species figured in the plates of the *Fundamenta Testaceologiæ* (Amœn. Acad. viii. 1785, 107) of Linnæus which are given as illustrative of the greater number of his genera, and of the terms used in describing them, as the types; but I do not think that he had any idea of so considering them, for he gives two species of *Arca*, four of *Patella*, three of *Cypræa*, four of *Murex*, five of *Trochus*, three of *Strombus*, and two of *Anomia*; while the genera *Conus*, *Mytilus* and *Pinna* are not illustrated. Should these figures have been regarded as the types of his genera, then *Ostrea pallium* would be the type of *Ostrea*, *Donax scripta* of *Donax*, *Chama gigas* of *Chama*, *Buccinum Harpa* of *Buccinum*, *Mya pictorum* of *Mya*, *Solen strigillatus* of *Solen*, and *Nautilus Beccaria* of *Nautilus*; species which certainly are not the best that could be chosen to agree with his characters, and to have adopted which would have greatly confused the science.

There is a series of works which appeared between the time of Linnæus and Lamarck which added much to the progress of conchology, but which have been overlooked by the conchologists of the Lamarckian school, as for example 'Meuschen Museum Geverianum,'

8vo, 1787; 'Humphrey's Catalogue of the Calonne Collection,' 8vo, 1797; and the 'Museum Boltenianum,' 12mo, 1798 (which was reprinted at Hamburg in 1819, but neither edition has occurred to me). These catalogues foreshadow the genera which have been since formed and generally adopted, but as they are mostly without characters, or with only very slight ones, I have not adopted the generic names they have given, except where their groups exactly corresponded with those which are now used, and to which new names have been applied, as for example *Neritella* for *Neritina*, &c.; or where the name used by the more modern author was necessary to be changed, because it had previously been used for some other genus of Mollusca.

I have been as careful as I could to give the proper dates of the various genera, especially where there was any doubt about the priority of a name; but where there was no doubt, as for example in the genera named by Lamarck between the publication of his 'Système' and his 'Histoire,' I have been satisfied with giving the dates of the volume of the latter work, without searching out the exact date of the publication in Lamarck's various papers; and I have followed the same course with regard to De Blainville's genera which appeared before the date of his 'Manuel' in the different volumes of the 'Dictionnaire des Sciences Naturelles'; but there are certain works the dates of which it is very difficult to ascertain, such for example as Ferussac's, which have no date marked on them. Others, such as D'Orbigny's 'South America,' the publication of which was spread over eleven years, from 1835 to 1846, and some other works of this author, are in the same predicament, the plates often appearing irregularly, and the text sometimes not till near the completion of the work. The same difficulty occurs in some of our English works, as Sowerby's 'Genera' for example; in these cases the dates assigned can only be regarded as approximative.

I have nearly confined the list to the genera which occur in the recent state: first, because, though I have paid considerable attention to fossil shells, I am not so well acquainted with them as with the recent ones; secondly, because the genera of fossil shells, which must depend on the study and organization of the recent ones, are not so well understood as those which now occur. And the increase in the knowledge of the animal gives us more and more reason to distrust our conclusions with regard to arrangements founded on the study of the shell alone, for it is impossible amongst the recent shells to distinguish the following genera:—

<i>Tectura</i> (<i>Lottia</i>) from	.....	<i>Patella</i> ;
<i>Ancylus</i>	„	<i>Siphonaria</i> ;
<i>Scutella</i>	„	<i>Patella</i> ;
<i>Philippia</i>	„	<i>Solarium</i> ;
<i>Vermetus</i>	„	<i>Serpula</i> ;
<i>Dentalium</i>	„	<i>Ditrupa</i> ;

though the four first each belong to different families of Mollusca, and the two latter are Mollusca, and their resemblances Annelides. The knowledge of the animals of *Nautilus* and *Spirula* now renders it

doubtful if *Orthocera* and other allied fossil genera are Decapodous, or Dibranchiate Cephalopods.

The arrangement followed is that which was proposed in the Synopsis of the Contents of the British Museum for 1838, and which has been gradually modified in the different editions, as I have become better acquainted with the animals of the different genera; and one or two alterations have been made for the same reason in this edition of the list. It is founded on the examination of the animals of all the molluscans contained in the London and Paris collections, as well as of all the drawings or engravings of the animals which I have been enabled to see, exceeding more than five thousand species, being at least one hundred times as many animals as were known when Lamarck proposed his system, and fifty times as many as were known to Cuvier when he published his system in the 'Animal Kingdom.'

Fam. I. STROMBIDÆ.

1. *Strombus*, Linn. 1754, Lam. 1801, Montf. 1810; not *Strombus*, Browne, 1756. *Alatae*, Gevers. 1787. *Alatus*, Humph. 1797. *Lambis*, Bolten, 1798. *Strombus pugilis*, Linn. *Conchilium*, Browne, 1756. *Strombus gigas*. *Canarium*, Schum. 1817. *Strombidea*, Swains. 1840. *St. urceus*. *Pterocera* α , Schum. 1817. *St. latissimus*. *Strombus* β , Schum. 1817. *St. epidromis* and *St. auris Dianæ*.
2. *Pterocera*, Lam. 1801. *Strombus Pterocere*, Blainv. *Lambis*, sp. Bolten, 1798. *Pteroceras*, Sow., Swains. 1840. *Aporrhais*, Rondel. *Strombus*, Humph. 1797. *St. lambis*. *Pteroceres*, Montf. 1810. *Pterocera* β , Schum. 1817. *St. scorpius*. *Harpago*, Klein, 1783. *St. Chiragra*.
3. *Fusus*, Humph. 1797. *Rostellaria*, Lam. 1801, Schum. 1817. *Rostellum*, Montf. *St. clavus*. *Strombus fissurellus*, Linn. *Hippochrenes*, Montf. 1810. *Hippocrena*, Schweig. 1820. *Hippochrenes*, Brown, 1824. *Hippocrene*, Latr. 1825. *Rostellaria* β , Blainv. 1825. *St. amplus*, Brander.
4. *Seraphys*, Montf. 1810. *Terebellum*, sp. Lamk. *Voluta*, sp. Oken, 1815. *Bulla sopita*, B. *volutata*, Brander. *Terebellum*, Lam. 1801, Montf. 1810, p. 379 (not 11), not Browne, 1756. *Bulla Terebellum*.

Fam. II. MURICIDÆ.

a. TRITONINA.

5. *Apollon*, Montf. 1810. *Ranella granifera*, Lamk. *Ranella*, Lam. 1812. *Rana*, Humph. 1797. *Bufo*, Montf. 1810, not Daud. *Murex gyrinus*, Linn. *Buffonaria*, Schum. 1817. *M. spinosus*. *Gyrina*, Schum. 1817. *Apollon*, Blainv. *Murex reticularis*, Linn.

- Columbaria, *Schum.* 1817. *M. conditus*, *Gmel.*
 Triton, sp. *Quoy.* *Tr. leucostoma.*
 Biplex, *Perry*, 1811. *Bip. perca.*
6. Triton, *Montf.* 1810, *Lam.* 1812. Tritonium, *Cuv.* 1817. Buccinum, sp. *Browne*, 1756; *Humph.* 1797. Lampusia, sp. *Schum.* 1817. *M. tritonis*, *Gm.*
 Lampusia, *Schum.* 1817. *M. pileare.*
 Lotorium, *Montf.* 1810. Buccinum, sp. *Browne.* *M. lotorium.*
 Aquillus, *Montf.* 1810. *M. cutaceus.*
 Lampas, *Schum.* 1817. *M. lampas.*
 Ranularia, *Schum.* 1817. *M. clavator.*
 Cumia, *Bivon*, 1838. *Ran. lanceolata*, *Menke.*
 Monoplex, *Perry*, 1811. *M. olearium.*
7. Persona, *Montf.* 1810. Distortio α , *Bolten*, 1798. Distorta, *Schum.* 1817. *M. anus.*
8. Pisania, *Bivon*, 1832. Pollia, sp. *Gray*, 1839. Tritonidea, sp. *Swains.* 1840. Pusio, *Gray*, 1834. Bucc. maculosum, *Lam.*
 Mitrella, sp. *Risso*, 1826, f. 64. Pisania, sp. *Bivon.* Bucc. D'Orbignyi, *Payr.* t. 8. f. 4, 6.
 Tritonidea, *Swains.* 1840. Triton, sp. *Lam. E. M.* Bucc. undosum, *Linn.*
 Rapana β , *Schum.* 1817. Pollia, sp. *Gray*, 1839. Bucc. tranquebaricum.
 ? Lachesis, *Risso*, 1826, f. 65, young shell. Lechesis, *Kiener.*
 ? Nesea, *Risso*, 1826, f. 67, young; f. 69, adult.
 Columbella, sp. (triumphalis), *Duclos.* Pollia, sp. *Gray*, 1839.
 Fusus (articulatus), *Lam.* Pollia, sp. *Gray*, 1839. Pusio, sp. *Gray*, 1834. Bucc. plumatum.
 Pusio, *Gray*, 1834. Pusio elegans.
9. Enzina (zonata), *Gray*, 1839.
 Columbella, sp. pyrostoma, *Sow.*
10. Murex, *Linn.*
 Murex, *Lam.* 1801. Brontes, *Montf.* 1810. Haustellum, *Schum.* 1817. Haustellaria, *Swains.* 1833. *M. haustellum.*
 Murex, *Montf.* 1810, *Swains.* 1833. Haustellum γ , *Schum.* 1817.
 Aranea, *Perry*, 1811. *M. tribulus.*
 Haustellum δ , *Schum.* 1817. *M. Brandaris.*
 Pyrella, *Swains.* 1840. Haustellum α , *Schum.* 1817. Turbinellus, sp. *Swains.* 1833. Pyrula, sp. *Brug. E. M.* *M. spirillus.*
 Ocenebra, *Leach MSS.* 1818. Tritonalia, *Flem.* 1828. Triton, sp. *Thomp.* *M. erinaceus.*
 Iaton, *Pusch*, 1837. Iaton, *Adans.* *M. lingua.*
 Centronotus, *Swains.* 1833. Muricanthus, *Swains.* 1840. *M. radix.*
 Pteronotus, *Swains.* 1840. *M. pinnatus.*
 Chicoreus, *Montf.* 1810. Phyllonotus, sp. *Swains.* 1840. Purpura, sp. *Browne*, 1756; *Martyn*, 1764?; *Schum.* 1817 (not *Lam.*).
 Triplex, *Humph.* 1797. *M. ramosus.*
 Phyllonotus, *Swains.* 1833. *M. imperialis.*

- Purpura*, *Humph.* 1797. *M. trunculus*.
Cerastoma, *Conrad*, 1837. *Cerostoma* and *Ceratostoma*, *Herrm.*
 1846. *M. monodon*, *Sow*.
Vitularia, *Swains.* 1840. *M. miliaris*, *Gmel.*
Typhis, *Montf.* 1810. *M. pungens*.
 11. *Trophon*, *Montf.* 1810. *Muricidea*, *Swains.* 1840. *Murex* α ,
Schum. 1817. *M. magellanicus*.
Tritonium *b*, *Loven*, 1846. *M. lyratus*.

b. CONINA.

12. *Turris*, *Humph.* 1797. *Pleurotoma*, *Lam. E. M.* and 1801, *Schum.*
 1817, *Swains.* 1840. *Pleurotomus*, *Montf.* 1810. *Murex* *baby-*
lonicus.
Pleurotoma, *Sw.* 1841. *M. virgo*.
Turricula, *Schum.* 1817. *M. Javanus*.
Perrona, *Schum.* 1817. *M. Perron*, *Gmel.* 167.
Tomella, *Swains.* 1810. *Clavatula*, sp. (*lineata*), *Lam.* 10.
Melatoma, *Swains.* 1840 (not *Anthony*), 342. f. 104.
Genot, *Adans.* 1757. *Pleurotoma* *mitreformis*, *Gray*, *Wood's*
Supp. t. 5. f. 5.
 13. *Clavatula*, *Lam.* 1801. *Brachystoma* (*castanea*), *Swains.* 1840.
M. clavatus, *Gmel.*, *Chem.* xi. f. 1831, 1832. *Clavicantha*,
Swains. 1840. *Clav. imperialis*, *Lam.*
Clavus, *Montf.* 1810. *Clavatula*, *Blainv.* 1826. *Clavicantha*, sp.
Swains. 1840. *Strombus lividus*, *Gmel.*
Clavatula (*sulcata*), *Swains.* 1840, *Chem.* xi. f. 1829. "Pl. *flavi-*
dula, var.," *Kiener*.
Pleurotoma, *Flem.* 1828. *M. sinuosus*, *Montag.*
Drillia (*umbilicata*), *Gray*, 1838, *Ann. N. H.*
Crassispira (*fasciata*), *Swains.* 1840, 152. f. 17 d. 313.
Brachystoma, *Swains.* 1840, 314. *Pleur. strombiformis*, *Sow*.
Conopleura (*striata*), *Hinds*, 1844.
Daphnella (*marmorata*), *Hinds*, 1844.
 14. *Bela*, *Leach*, 1817. *Mangilia*, *Loven*, 1846. *Murex* *nebula*, *Montf.*
Defrancia, *Moller*, not *Millet*. *Tritonium* ** *b*, *Loven*. *Mur. tur-*
ricula, *Montag.*
 ? *Mangelia*, *Risso*, 1826, f. 130. *Ishnula*, *Clarke*. (See also *Man-*
gelia, *Risso*, f. 97, 99.)
 15. *Mangelia*, *Leach*, 1817.
Mangelia (*striolata*), *Risso*, 1826, f. 101. *Pleur. tæniatum*, *Desh.*?
 ? *Mangelia*, "*Leach*," *Hinds*, 1844. *M. cinnamomea*.
 N.B. *Mangelia*, *Risso*, fig. 102, 103, are *Rissoinæ*.
 16. *Defrancia*, *Millet*, 1826 (*Ann. Soc. Linn. Paris*), *Loven*, 1846.
Mur. linearis, *Montf.*
Pleurotoma, sp. (*purpureum*), *Philippi*. *Murex purpureus*, *Montf.*
 17. *Anna* (*Massena*), *Risso*, 1826, f. 68. *Bucc. Scacchianum*, *Phi-*
lippi, ii. 188. t. 27. f. 5.

- Buccinum* (minimum), *Montf.*, *Philip*. ii. 189. *Fusus turritellatus*, *Desh.*
18. *Conus*, *Linn.* *Voluta*, *Brown*, 1756, not *Linn.* *Strombus*, *Adans.* 1757, not *Linn.*
Conus, *Lam.* 1801. *C. marmoreus*.
Conus, *Montf.* 1810, *Swains.* 1840. *C. generalis*.
Coronaxis, *Swains.* 1840. *C. bandanus*.
Puncticulus, *Swains.* 1840. *C. arcuatus*.
Rhombus, *Montf.* 1810. *C. bandanus*.
Rollus, *Montf.* 1810. *Utriculus*, *Schum.* 1817. *C. geographicus*.
Tuliparia, *Swains.* 1840. *C. Tulipa*.
Cylindrella, *Swains.* 1840; not *Pfeiffer*, 1840. *C. asper*.
Conilithes, *Swains.* 1840. *C. antediluvianus*.
Dendroconus, *Swains.* 1840. *C. betulinus*.
Cylinder, *Montf.* 1810. *Textilia*, *Sw.* 1840. *C. textilis*.
Hermes, *Montf.* 1810. *Theliconus*, *Sw.* 1840. *C. nusatella*.
Leptoconus, *Sw.* *C. grandis*.
Conorbis, *Sw.* *C. dormiter*.
19. *Colus*, *Humph.* 1797. *Fusus*, *Lam.* 1801, *Montf.* 1810, *Schum.* 1817, not *Humph.* *Mur. colus*.
Busyeon, sp. *Bolten*, 1798. *Murex aruanus*.
20. *Sycotypus*, *Browne*, 1756. *Ficus*, *Bolten*, 1793; *Humph.* 1797.
Pyrula, *Lam. E. M.* and 1801, *Montf.* 1810, *Schum.* 1817.
Ficula, *Swains.* 1840. *Bulla ficus*.
21. *Cassidulus*, *Humph.* 1797. *Melongena*, *Schum.* 1817. *Pyrula*, sp. *Lam.* *Myristica*, sp. *Swains.* *Mur. melongena*, *L.*
Pyrula, sp. (*spirata*), *Lam.* 1822. *Bulla pyrum*.
Pugilina β , *Schum.* 1817. *Ficus*, sp. *Humph.* 1797. *Fusus*, sp. *Lam.* 1822. *Mur. morio*.
Pugilina α , *Schum.* 1817. *Pyrula*, sp. *Lam.* *M. pyrum*.
Hemifusus, *Swains.* 1840. *Fusus colosseus*, *Lam.*
Myristica, sp. *Swains.* 1840. *Mur. hippocastanum*, *Born.*
22. *Fulgur*, *Montf.* 1810. *Pyrula*, *Swains.* 1840. *Pyrula*, sp. *Lam.* *M. perversus*.
Pyrula, sp. (*carica*), *Lam.* 1822.
23. *Rapana* α , *Schum.* 1817. *Pyrula*, sp. *Lam.* *Purpura*, sp. *Kiener.* *Muriciformis*, *Gevers.* *Bucc. Bezoar*, *Linn.*
Murex, sp. (*Rapa*), *Linn.*
Latiaxis, *Swains.* 1840. *Pyrula Mawæ*, *Gray.*
Rapella, *Swains.* 1840. *Ficula*, sp. (*caudata*), *Swains.* 1840. *Bulbus*, sp. *Humph.* 1797. *Pyrula*, sp. *Lam.* *Bulla rapa*.
24. *Cuma*, *Swains.* 1840. *Cuma*, part. *Humph.* *C. sulcata*, *Swains.* 1840, 87. f. 4.
25. *Latirus*, *Montf.* 1810 (*Lathirus* or *Lathyrus*, *Gray*). *Fusus*, sp. (*filosus*), *Lam.* 1822. *Mur. gilbulus*, *Gmel.*
Polygona, *Schum.* 1817. *Turbinellus*, sp. *Lam.* 1822. *Plicatella*,

- sp. *Swains.* *Fusus*, sp. *Lam. E. M.* and *Quoy.* *Mur. infundibulum.*
- Plicatella*, *Swains.* 1840. *Turbinellus*, sp. *Lam.* *Fusus*, sp. *Quoy.* *Mur. polygonus.*
26. *Fasciolaria*, *Lam.* 1801, *Montf.* 1810. *Fusus*, sp. *Quoy & Gaim.* *Pyrula*, *Perry*, 1811. *Cuma*, sp. *Humph.* 1797. *Mur. Tulipa*, *Linn.*
27. *Turbinellus*, *Lam.* 1801, *Montf.* 1810. *Voluta canaliculata*, *Scopoli*, 1777. *Turbinella*, *Lam. E. M.* and 1822. *Rapum*, *Humph.* 1797. *Voluta pyrum.*
28. *Cynodonta*, *Schum.* 1817. *Scolymus*, part. *Swains.* 1840. *Turbinella*, part. *Lam.* *Volutella*, sp. *Perry*, 1811. *Vol. ceramica.* *Scolymus*, sp. *Swains.* 1840. *Vol. turbinellus.*
29. *Lagena*, *Schum.* 1817. *Turbinella*, sp. *Lam.* *Plicatella*, sp. *Swains.* *Bucc. rusticum.*
- Leucozonia.* *Fasciolaria*, sp. *Lam. E. M.* *Turbinella* β , *Blainv.* *Mur. nassa.*
- Monoceros*, sp. (*cingulatum*), *Lam.* 1822, not 1812.
30. *Cancellaria*, *Lam.* 1801. *Cancellarius*, *Montf.* 1810. *Buccinella*, *Perry*, 1811. *Murex*, *Humph.* 1797. *Vol. reticulata.*
- Trigona*, *Perry*, 1811. *Trigonostoma*, *Blainv.* 1825. *Cancellaria*, sp. *Desh.* *Delphinula trigonostoma*, *Lam.* 1818.
- Cancellaria abnormis*, *Gray.*
- Admete (crispa)*, *Moller*, 1842. *Tritonium*, sp. (*viridula*), *O. Fab.*
- Murex*, sp. (*costelliferus*), *Sow.* *Cancellaria*, sp. *Gould, Loven.*
- Admete crispa.*
- ? *Macromphalus (reticulatus)*, *S. Wood*, 1842.
31. *Separatista.* *Turbo*, sp. *Gmelin, Chemn.* x. f. 1589, 1590. *Turbo helicina*, *Gmel.*
- ? *Cornu*, *Schum.* 1817, 255, *Chemn.* x. f. 1273. *Argonauta Cornu*, *O. Fab.*
32. *Struthiolaria*, *Lam.* 1812. *Triton* ϵ , *Blainv.* 1825. *Mur. stramineus.*
33. *Aporrhais*, *Aldrov., Da Costa*, 1778. *Aporrhais*, *Swains.* 1837. *Chenopus*, *Philippi*, 1836. *Rostellaria*, sp. *Lam.* 1822. *Tritonidium*, sp. *Müller.* *Strombus Pes-pelecani.*
34. *Chorus*, n. g. *Purpura*, sp. *Blainv.* *Monoceros giganteus*, *Lesson.*
35. *Gastridia.* *Pseudoliva*, *Swains.* 1840. *Pseudodactylus*, *Herrm.* 1847. *Eburna*, sp. *Sow.* *Buc. plumbeum.*
- Struthiolaria?* *monoceros*, *Gray.*
- Monoceros*, *J. Lea*, 1833, not *Lam.* *Mon. fusiformis*, *Lea.*
- Fusus*, sp. *J. Lea.* ? *Monoceros*, sp. *J. Lea*, 1833, not *Lam.* *Fusus Taitii*, *J. Lea*, young? *Monoceros pyruloides*, *Lea.*
36. *Leiotomus*, *Swains.* 1840. *Fusus*, sp. *Lam.* *M. Bulbus*, *Brand.*

37. *Clavella*, Swains. 1837. *Clavellithes*, Swains. 1840. *Fusus*, sp. Lam. *M. longævus*, Brand.
38. *Cyrtulus serotinus*, Hinds, Zool. Sulph. 1844.
39. *Chrysodomus*, Swains. 1840. *Murex* β , Schum. *Tritonium*, Müller, Loven, 1846, not Cuvier, 1817. *Mur. antiquus*. *Atractus*, Agassiz, 1840. *M. corneus*.
40. *Pusionella*, Gray. *Terebra* (Nifat), Adans. 1757. *Fusus*, sp. Lam. *Mur. Pusio*, Born. *Tritonidea* (sp.), Swains. 1840. *Fusus aculeiformis*, Lam.
41. ? *Atractodon*, Charlesworth, Mag. N. H.

Fam. III. BUCCINIDÆ.

CASSIDINA.

42. *Cassis*, Browne, 1756 ; *Scopoli*, 1777 ; Lam. 1801 ; Montf. 1810. *Cassidea*, Brug. *Cassida*, Humph., not Linn. *Buc. flammeum*. *Cassidea* β , Schum. 1817. *Buc. cornutum*. *Cassidea* α , Schum. 1817. *Buc. rufum*. *Cypræcassis*, Stutchbury, Swains. 1840. *Bucc. Testiculum*.
43. *Bezoardica* α , Schum. 1817. *Cassidea* β , Swains. 1840. *Cassis*, sp. *Scopoli*. *Cassidea*, sp. Brug. *Bucc. glaucum*. *Bezoardica* β , Schum. *Bucc. areolatum*.
44. *Levenia*, Gray, 1847. *Cassis coarctatum*, Gray.
- 44*. *Morio*, Montf. 1810. *Cassis*, sp. Martini. *Cassidaria*, Lam. 1812, 1822. *Echinora*, Schum. 1817. *Cassidarea*, Swains. 1840. *Cassidea*, sp. Brug. *Bucc. echinophorum*.
45. *Sconsia*, Gray, 1847. *Oniscia* (Alicia), Risso, 1826. *Cassidaria striata*, Lam. 1822.
46. *Oniscia*, Sow. 183 ? *Oniscidia*, Swains. 1840. *Cassidaria*, sp. Kiener. *O. cancellata*, Sow.
47. *Morum*, Bolten, 1798. *Hystrix*, Humph. 1797. *Ersina*, Gray, 1840. *Cassidaria*, sp. Lam. 1822. *Cassidea* γ , Schum. 1817. *Oniscia*, sp. Sow. *Conus*, sp. *Scopoli*, 1777. *Cassidea*, sp. Brug. *Strombus oniscus*, Linn.
48. *Cythara*, Schum. 1817. *Cancellaria*, sp. Lam. 1822. *Strombus jun.*, Deshayes. *Cancellaria citharella*, Lam.
49. ? *Mingeria bicolor*, Gray, B.M.
50. *Dolium*, Browne, 1756 ; Humph. 1797 ; Montf. 1817. *Cadus*, Bolten, 1798. *Purpura* (Mingac), Adans. *Bucc. galea*. *Perdix*, Montf. 1817, not Linn. *Purpura Tesan*, Adans. *Dolium*, sp. Browne, 1756. *Bucc. Perdix*.
51. *Malea*, Valenc. 1833. *Cassidea*, sp. Swains. *Dolium*, sp. Menke. *D. ringens*, Swains. *D. personatum*, Menke. *Cassis labrosa*, Martini. *Dolium*, sp. Lam. *Bucc. pomum*.

52. Harpa, *Humph.* 1797, *Lamk.* 1801, *Montf.* 1810. Sistrum, sp. *Oken*, 1815. Buccinum, sp. *Lam.* Bucc. Harpa.
Buccinum, sp. (stromboides), *Lamk.* Scaphella, sp. *Swains.* 1840, 122. f. 12. a, b.
53. Columbella, *Lam.* 1801, *Schum.* 1817, *Swains.* 1840. Columbus, *Montf.* 1810. Voluta subemarginata, *Scopoli*, 1777. Buccinum (barnet), *Adans.* 1757. Voluta mercatoria.
Cionella (picata), *Swains.* 1840, 312. 151. 153. 220.
Conidea (semipunctata), *Swains.* 1840, 312. 151. f. 17. b. Voluta discors.
Pusiosoma (punctata), *Swains.* 1840, 313. 151. 153.
Nitidella, *Swains.* 1840, 313. 151. f. 17. e. Col. nitida, *Lam.*
Pisania, sp. *Biron*, 1832. Mitrella, sp. (flammea), *Risso*, 1826, f. 144. Fusus glaber, *Risso*, 1826, f. 129. Purpura, sp. *Risso*, f. 88. Bucc. corniculatum, *Lam.*
- 53*. Sinusigera, *D'Orb. Amér. Mér.* 429, not described.
54. ? Cominia, *Brown*, 1844 (*Ill. Conch.*). Jaminia, sp. *Brown*, 1827. Voluta hyalina, *Montf.*

PURPURINA.

55. Purpura, *Lamk.* 1801, *Blainv.* Buccinum, *Schum.* 1817. Sistrum, sp. *Oken*, 1819. Bucc. persicum.
Purpura, *Swains.* 1840. P. coronata, *Lam.*
Stamonita, *Schum.* 1817. ? Sistrum, *Oken.* Bucc. hæmastoma.
Microstoma, *Swains.* 1840. Bucc. patulum.
Vexillum, *Swains.* 1840. Strombus vexillum, *Linn.*
Trochia, *Swains.* 1840. Triton, sp. *Lam. E. M.* Bucc. scala.
Polytropia, *Swains.* 1840. Bucc. lapillus.
Ricinella $\beta\beta$, *Schum.* 1817. Purpura Histrix, *Lam.*
Nassa and Lagna, sp. *Bolten*, 1798.
56. Pedicularia (sicula), *Swains.* 1840, 357. f. 44; *Gray*, 1846 (*Ann. N. H.*). Thyreus (paradoxus), *Philippi*, 1844.
- 56*. Concholepas, *Favan.*; *Lam.* 1801, *Montf.* 1810. Buccinus, sp. *Brug.* Purpura, sp. *Blainv.* Patella Lepas, *Gm.*
57. Acanthiza, *Fischer*, 1807 (*Mus. Demid.*). Monoceros, *Lam.* 1812, 1822, not *Flem.* Unicornus, *Montf.* 1810. Rudolphia, *Schum.* 1817. Rudolphus, *Chemn.* Purpura a, *Blainv.* Thais, sp. *Bolten*, 1798. Bucc. monoceros.
58. Planaxis, *Lam.* 1822, not *Risso*, 1826; *Blainv.* 1828. Bucc. sulcatum.
Hinea, *Leach MSS.* 1817. Plan. mollis, *Sow.*
59. Quoyia, *Desh. MSS.* 1830; *Gray*, 1839. Leucostoma, *Swains.* 1840, 172. f. 24. Fissilabria, *T. Brown*, 1836 (*Edinb. Jour. N. H.*). Quoya, *Desh.* 1843. Planaxis decollata, *Quoy and Desh.*

60. Sistrum, *Montf.* 1810. ? Mur. ricinus.
 Ricinula, *Lamk.* 1812, 1822; *Blainv.* 1823. Ricinella, *Schum.* 1817. Purpura, sp. *Kiener.* Murex neritoideus.
 Morula, *Schum.* 1817, 227. Ricin. morus, *Lam.*
 Ricinella β , *Schum.* 1817. Ricin. digitata, *Lam.*
61. Campulotus. Campulote, *Guet.* 1759. Magillus, *Montf.* 1810, *Blainv.* Tubulites, *Davilla.* Spirobranchus, *Blainv.* M. antiquus, *Montf.*
 Leptoconchus, *Rüpp.* 1835. M. Peronii, *Lam.*

BUCCININA.

62. Buccinum, *Linn.* ?, *Lam.* 1801, *Montf.* 1810. Tritonium, *O.Fab., Schum.* 1817. Tritonium **, *Loven,* 1846. Bucc. undatum.
63. Latrunculus. Nassa, *Schum.* 1817. Eburna, sp. *Lam.* 1822, not 1801. Eburna, *Swains.* 1840. Bucc. spiratum.
 Eburna zetlandica, *Lam.*
64. Trichotropis, *Brod. & Sow.* 1829. Trichopodus, *Swains.* 1840, 211. Trichotropus, *Lesson.* Trocophore, *Desh. E. M.* 1830. Turbo carinatus, *Sow.*
 Trichotropis *, *Sow.* Murex carinatus, *Laskey.*
65. Acus, *Humph.* 1797. Terebra, *Lam.* 1801. Subula, *Schum.* 1817, *Blainv.* 1825. Bucc. maculatum.
 Terebrum, *Montf.* 1810. Bucc. subulatum.
 Subula β , *Schum.* 1817. Bucc. dimidiatum.
 Eburna β , *Schum.* 1817. Leiodomus, sp. *Swains.* Bucc. vittatum.
66. Dorsanum. Bucc. politum, *Lam.*
 Bucc. lineolatum, *Wood, Supp.*

NASSINA.

67. Bullia, *Gray,* 1834 (A. King). "Bulliana, *Gray.*" Buccinum, sp. *Lam.* 1822. Bucc. semiplicatum, *Wood.*
 Leiodomus, sp. *Swains.* 1840. Buccinum a Eburnes, *Blainv.* Terebra (arvan), *Adanson.* Bucc. digitale.
 Buccianops, *D'Orb. A. M.* Bucc. Cochlidium.
68. Nassa, *Lam.* (1799), 1801; *Montf.* 1810, not *Schum.* Bucc. arcularia.
 Monoceros, *Flem.,* not *Lam.* Bucc. hepaticum, *Montf.*
 Planaxis, *Risso,* 1826, f. 136, not *Lam.* Tritia, *Risso MSS.* Hinia, *Leach MSS.* 1817. Nasa, *Flem.* Bucc. reticulatum.
 Alectrion, *Montf.* 1810. Nassa β , *Schum.* 1817. Bucc. papillosum.
 Tritonia, *Turton.* Ranella pygmea, *Lam.*
 Eione, *Risso,* 1826, f. 50. Bucc. gibbosulum.
 Cyclops, *Montf.* 1810. Cyclope, *Risso.* Nana β , *Schum.* Nanina, *Risso* (Nannia, *Philippi*). Cyclonassa, *Swains.* 1840. Bucc. Neriteum.

69. Desmoulea, *Gray*, 1838, *Ann. N. H.* D. pulchra, *Gray*.
 70. Northia. Nassa, sp. (Northiæ), *Gray*. Bucc. sp. (pristis), *Desh.* N. pristis.
 71. Ringicula, *Desh.* 1838 (*Lam.* viii. 343), *S. Wood*. Marginella, *Risso*, 1826, not *Lam.* Auricula, sp. *Lam.* Voluta, sp. *Brocchi*, *Eichw.* Marginella, sp. *Menard*, &c. Nassa, sp. *Féruss.* Auricula ringens.
 72. Phos, *Montf.* 1810. Rhinodomus, *Swains.* 1840. Murex (Phos), *Blainv.* Cancellaria, sp. *Lam.* Buccinum, sp. *Brug.* Mur. senticosus.
 73. Cyllene, *Gray*, 1839, *Swains.* 1840. C. Owenii, *Gray*.

OLIVINA.

74. Strephona, *Brown*, 1756. Oliva, *Lam.* 1801, *Montf.* 1810; *D'Orb.* Cuba, 109. Porcellana, sp. (Girol), *Adans.* Cylindri, sp. *Gevers.* 1787. Vol. porphyria.
 Ancillaria, *Risso*, 1826, not *Lam.* Anc. fluminea, *Risso*.
 Ispidula. Vol. Ispidula.
 Cylindrus, *Meusch*, not *Schum.* Vol. tigrina, *Schroet.*
 75. Olivella, *Swains.* *Elem.* 1837, 1840 (322. t. 87. f. e). Olivina, *D'Orb.* A. M. 417, 184 ? Olives ancylloides, *Duclos.* Oliva, sp. *Lam.* Vol. jaspidea, *Gm.*
 Olivella (biplicata), *Swains.* 1840.
 ? Lamprodoma, *Swains.* 1840. Oliva volutella, *Lam.*
 76. Scaphula, *Swains.* 1840, 132. f. 87. b, not *Benson.* ? Olives volutes, *Duclos.* Oliva auricularia, *Lam.*
 Utriculina. Vol. Utriculus.
 Olivancillaria, *D'Orb.* 1846. Oliva, sp. (brasiliensis), *Chemn., Lam.* Vol. pinguis.
 77. Agaronia, *Gray*, 1839 (*Beechey's Voy.*). Porcellana, sp. (*Agaron*), *Adans.* 1757. Ancilla, *Schum.* 1817, not *Lam.* Hiattula, *Swains.* Z. I. ii. t. 76. Oliva, sp. *Lam.* Vol. hiattula.
 78. Ancilla, *Lam.* 1801, *Schum.* 1817. Ancillaria, *Lam.* *Ann. M.* & 1822. Anaulax, *Roissy.* Voluta, sp. *Gmelin.* Bulla cypræa. Ancillus, *Montf.* 1810. A. Buccinoidea, *Lam.*
 "Anolax (obsoleta), *Bronn,*" *Philippi.* Bucc. obsoletum, *Brocchi.* Oliva (striata), *Swains.* Z. Ill. ii. t. 40. Oliva & Ancil. canalicifera, *Lam.*
 80. Eburna, *Lam.* 1801. Eburna, sp. *Lam.* 1822. Ancillaria, sp. *Sow.* Eburna a, *Schum.* 1817. Eburnus, *Montf.* Bucc. glabratum, *L.*
 81. ? Monoptygma, sp. *J. Lea*, 1833. Monop. alabamensis, *J. Lea.*
 ? Monoptygma, sp. *Lea.* Monotigma or Monotygmia, *G. Sowerby.* Mon. elegans, *Lea.*

Fam. IV. VOLUTIDÆ.

a. YETINA.

82. Yetus, *Adans.* 1757. Cymba, sp. *Brod.* Vol. Neptuni.
 Cymbium, *Martini*; *Gray*, 1840. Cymbium a, *Schum.* 1817.
 Cymbium, sp. *Menke*, 1830. Voluta (1), *Swains.* 1840. Cymba,
Brod., *Sow.* Melo, sp. *Humph.* 1797. Vol. olla, *Linn.*

VOLUTINA.

83. Cymbium, *Adanson*, 1757; *Montf.* 1810; *Menke*, 1830. Cym-
 bium β , *Schum.* 1817. Melo, sp. *Humph.* 1797. Voluta (1),
Swains. 1840. Melo, *Brod.*, *Sow.* Vol. æthiopica.
 Melo indicus, *Brod.* Vol. Melo.
84. Volutella, *D'Orb. A. M.* 423, not *Swains.* Voluta (1), *Swains.*
 1840, 317. Vol. angulata.
85. Voluta, *Linn.*? *Scopoli*, 1777; *Lam.* 1801; *Montf.* 1810. Vo-
 luta γ , *Schum.* 1817, 238. Musica, *Humph.* 1797, *Gray*, 1840,
S.B.M. Harpula (2), *Swains.* 1840, 317. Vol. musica.
86. Cymbiola, *Swains.* 1840, 317. Vol. ancilla.
 Cymbiola (4), *Swains.* Vol. colocynthis.
87. Scapha. Voluta a. & β , *Schum.* 1817, 237. Cymbiola (2).
 Vol. vespertilio.
 Voluta (5), *Swains.* 1840. Vol. magnifica.
 Aulica. Vol. aulica.
88. Fulgoraria, *Schum.* 1817, 242. Harpula (3), *Swains.* Vol. ru-
 pestrus.
89. Harpula (1), *Swains.* 1840, 317. f. 82. Vol. vexillum.
90. Scaphella (1), *Swains.* 1840, 318. Vol. fusiformis.
 Scaphella, sp. *Swains.* Vol. Junonia.
91. Volutilithes, *Swains.* 1840, 318. Vol. spinosa.
92. Lyria. Harpula (4), *Swains.* Vol. nucleus.
93. Callipara Harpula (4), *Swains.* Vol. bullata.

MITRINA.

94. Mitra, *Lam.* 1801, *Montf.* 1810. Vol. episcopalis.
 Thiarella, *Sw.* 1840, 319. Vol. papalis.
 Scabicola, *Sw.* 1840. M. serpentina.
 Nebularia, *Sw.* 1840. M. contracta.
 Strigatella, *Sw.* 1840. M. zebra.
 Mitrella, sp. *Sw.* 1840, not *Risso*, 1826. M. fissurata.
 Columbella, sp. *Kiener.* Vol. tringa.
95. Zierliana. Buccinum, sp. (strombiformis), *Burrows.* Cancellaria,
 sp. *Lam.* Mitra, sp. *Kiener.* Voluta ziervogelii.
96. Turris, *Montf.* 1810; *Gray*, 1840. Vulpecula, *Gray*, 1840 (Syn.
 B. M.). Vol. vulpecula.

- Tiara*, *Swains.* 1840, f. 84. *c, g.* *M. corrugata.*
Costellaria, *Sw.* 1840, f. 84. *d.* *M. rigida.*
Cancellaria, *Sw.* 1840, f. 84. *b.* *M. Isabella.*
Pusia, *Sw.* 1840, 320. *M. microzonalis.*
Mitrella (*costulata*), *Risso*, 1826, f. 56, not *Swains.* *Mitreola*,
Swains. 1833, *Z. I.* *M. monodon.*
 97. *Volvaria*, *Lam.* 1801. *Volvaria*, sp. *Lam.* 1822, not *Conrad.*
Volvarius, *Montf.* 1810. *V. bulloides*, *Lam.*
 98. *Cylindra*, *Schum.* 1817, 236. *Voluta crenulata*, *Lam.*
Mitrella, sp. *Swains.* 1837, 1840, not *Risso*, 1826. *Vol. dactylus.*
 99. *Imbricaria*, *Schum.* 1817, 236. t. 21. f. 5; *Gray*, 1840. *Conœlix*,
Swains. 1840, 321. *Conohelix*, *Swains.* 1833, 1840, 318. *Co-*
noelix, *Sow.* *Conalex*, *Jay.* *Vol. conus.*

MARGINELLINA.

100. *Porcellana*, *Adans.* 1757. *Dactylus*, *Humph.* 1797. *Marginella*,
Lam. 1801. *Marginellus*, *Montf.* 1810. *Cymbium*, sp. and
Pterygia, sp. *Bolten*, 1798. *Vol. glabella.*
Glabella, *Swains.* 1840, 324. f. 91. *Porcellana Narel*, *Adans.*
Vol. faba.
Volutella, *Swains.* 1840, not *D'Orb.* *Vol. bullata.*
Marginella, *Swains.* 1840. *Vol. marginata.*
Phænospira (*noduta*), *Hinds*, 1844.
Cryptospira (*tricineta*), *Hinds*, 1844.
 101. *Hyalina*, *Schum.* 1817, 234. *Volvaria*, sp. *Lam.* 1822, not 1801.
Bulla, sp. *Linn.* *Porcellana* (*Talier*), *Adans.* *Voluta pallida.*
 102. *Persicula*, *Schum.* 1817, 235; *Martini*; *Gray.* *Porcellana*
(Bobi and Duchon), *Adans.* *Persicola*, *Swains.* 1840, 323. f. 90.
Marginella, sp. *Lam.* 1822. *Vol. persicula.*
Voluta, *Flem.* *Vol. catenata*, *Mont.*
Gibberula, *Swains.* 1840. *Volvaria*, *Risso*, 1826. *Volvaria*, sp.
Lam. 1822. *Vol. miliaria.*

Fam. V. CYPRÆADÆ.

103. *Cypræa*, *Linn.*; *Browne*, 1756. *Porcellanæ*, *Gevers*, 1797. *Cy-*
præa evidentes, *Scopoli*, 1777. *Cypræa* (*Maget*), *Adanson*, 1757.
Cypræa stercoraria, *junior.* *Bulla*, sp. *Linn.*
Cypræa, *Lam.* 1801, *Montf.* 1810. *Cypræa β*, *Schum.* 1817.
C. exanthema.
Cypræa α, *Schum.* 1817. *C. Tigris.*
Pustularia, *Swains.* 1840, 324. *C. cicercula.*
Peribolus (*Potan*), *Adans.* 1757, *Blainv.* 1825. *Bulla*, sp. (*ovata*),
Gmelin. *C. Mauritiana*, *Junior.*
 104. *Trivia*, *Gray*, 1832, *Z. Jour.* *Trivea*, *Swains.* 1840, 325, *junior.*
Bulla, sp. *Mont.* ? *Cypræa* (*Acton*), *Adans.* *Cyp. europea.*
 105. *Cyprovula*, *Gray*, 1832, *Z. J.* *Cypræova*, sp. *Swains.* 1840.
Cyp. capensis.

106. *Luponia*, *Gray*, 1832, *Z. J.* *Cypræova*, sp. *Swains.* 1840. *Cyp. algoensis.*
Cyprædia, *Swains.* 1840, 325. *Cyp. elegans*, *Lam.*
107. *Erato*, *Risso*, 1826; *Gray.* *Cypræa*, sp. *Montag.* 1803. *Marginella*, sp. *Leach*; *Flem.* 1828; *Philippi.* *Voluta*, sp. *Don.* *Vol. lævis*, *Don.*
108. *Amphiceras*, *Gronov.* 1781. *Cyprea*, sp. *Browne*, 1756. *Ovula*, *Brug.* 1789; *Lam.* 1801. *Ovulus*, *Montf.* 1810. *Ovulum*, *Sow.* *Licium*, sp. *Humph.* 1797. *Cyphonia*, sp. *Bolten*, 1798. *Cypræa obscura*, sp. *Scopoli*, 1777. *Bulla ovum.*
Ultimus, *Montf.* 1810. *Carinea*, *Swains.* 1840. *Bulla gibbosa.*
Calpurnus, *Montf.* 1810. *Cyprella*, *Swains.* 1840. *Bulla verrucosa.*
Radius, *Montf.* 1810. *Birostra*, *Swains.* 1840. *Bulla volva.*
Radius, *Schum.* 1817. *Bulla birostris.*
Simnia, "*Leach*;" *Risso*, 1826. *S. nicæensis*, *Risso.*
Simia, *Leach*, 1819. *Volva*, *Flem.* *Bulla patula.*
Calpurna, *Flem.* 1828. *Ovula Leathesii*, *Sow.*
109. *Lamellaria α*, *Montag.* 1815. *Lamellaria*, *Menke*, 1830; not *Lamoureux.* *Marsenia*, *Leach MSS.* 1819; *Oken Isis*, 1823; *S. Wood*, 1844. *Bulla*, sp. *Montag.* 1804. *Sigaretus*, *Blainv.* 1825, t. 42. f. 2; *Flem.* 1828.; *Risso*, 1826. *Vitrina*, sp. *Jans. & Christ.* *Coriocella*, sp. *Philippi*, 1836, 1844. *Helix perspicua.*
Sigaretus?, *Moller.* *S. groenlandicus*, *M.*
Oxinoë, *Couthouy*, 1839. *O. glabra*, *Couth.*
Sigaretus, *Cuv. Bull. Sci. & Anat. Moll.* 1817. *Sigaret* (animal, not shell), *Lam. Syn.* 1801. *Cryptothyra*, *Menke*, 1830. *Coriocella*, *Blainv. D.S.N.* 1824; *Gray*; *Menke*, 1830; *Swains.* 1840, 355. *Sigaret* (de tonga), *Quoy & Gaim.* *Chelinotus*, *Swains.* 1840, 355. *Coriocella nigra*, *Bl.**

Order II. PHYTOPHAGA.

Sect. I. PODOPHTHALMI.

Fam. I. TURBINIDÆ.

TURBINI.

110. *Turbo*, *Linn.*; *Lam.* 1801. *T. marmoratus.*
Turbo, *Montf.* 1810. *Cidaris*, sp. *Swains.* 1840. *T. petholatus.*
Senectus, *Swains.* 1840. *Turbo β*, *Schum.* 1817. *T. Spengleri.*
Lanatica, *Bolten*, 1798. *T. olearius.*
111. *Sarmaticus*, *Gray*, 1840. *Turbo β β*, *Schum.* 1817. *Cidaris*, sp. *Swains.* 1840; not *Lam.* *T. sarmaticus.*
112. *Batillus α*, *Schum.* 1817, 197. *Senectus*, sp. *Swains.* *T. cornutus.*

* All from the same species. The specimens of *Coriocella nigra* in the British Museum, presented by Cuvier and described by Blainville, has a distinct shell. This genus has nothing to do with *Montagua*, Fleming.

113. *Marmorostoma*, *Swains. Z. I.* & 1840. *Batillus* β , *Schum.* 1817, 197. *T. versicolor*.
 114. ? *Tuba*, *J. Lea*, 1833, t. 4. f. 117, 119. *Delphinula*, sp. *Lam.* *D. marginata*, *Lam.* *Tuba striata*, *Lea*.

IMPERATORINA.

115. *Imperator*, *Montf.* 1810, 199. *Sol*, sp. *Humph.* 1797. *Canthorhis*, *Swains.* 1840, 349. *Turbo*, sp. *Adans.* *Trochus imperialis*.
Calcar α , *Schum.* 1817, 193. *Tr. solaris*.
Calcar, *Montf.* 1810. *Calcar* β , *Schum.* 1817, 194. *Cyclocantha*, sp. *Swains.* 1840, 349. *Turbo*, sp. *Quoy.* *Delphinula*, *Flem.* 1828. *Tr. stellaris*.
Bolma, *Risso*, 1826. *Tubicanthus*, *Swains.* 1840. *Turbo rugosus*.
Tubicanthus, *Swains.* 1840, 349. *Trochus* β , *Schum.* 1817. *T. Cookii*.

EUTROPINA.

116. *Eutropia*, *Humph.* 1797. *Phasianella*, *Lam. E. M.* & 1812. *Phasianella*, sp. *Lam.* 1822. *Phasianus*, *Montf.* 1810, 254. *Bucc. australe*, *Gmel.*
Tricolea, *Risso*, 1826. *Thicolea*, *Leach MSS.* 1819; *Gray*, 1840. *Eutropia*, sp. *Humph.* *Phasianella*, sp. *Payr.* *Turbo pullus*.

Fam. TROCHIDÆ.

PYRAMIDINA.

117. *Pyramis*, *Chemn.*; *Schum.* 1817, 232; *Gray*, 1840. *Tectus*, *Montf.* 1810. *Pyramidea*, sp. *Swains.* 1840, 350. *Tr. obeliscus*, *Lam.*
 118. *Tegula (elegans)*, *Lesson*, 1834. *Tr. Emma*, *Gray*.
 119. *Cardinalia*, *Gray*, 1840, 56. *Pyramidea*, *Swains.* 1840, 350. *Tr. virgatus*.

TROCHINA.

120. *Trochus*, *Linn.*; *Lam.* 1801; *Montf.* 1810, 179. *Pyramidea*, *Swains.* 1820. *Tr. Niloticus*.
 121. *Infundibulum*, *Montf.* 1810, 167. *Carinidea*, *Swains.* 1840, 350. *Tr. concavus*.
 122. *Polydonta a*, *Schum.* 1817, 237. *Lamprostoma*, *Swains.* 1840, 350. *Tr. maculatus*.
Phorceus, *Risso*, 1826, f. 47. *Omphalius*, *Philippi*, 1847. *Tr. cinereus*, *Dacosta.* *Tr. rusticus*.
 123. *Clanculus*, *Montf.* 1810, 191 (*Clangulus*, *Gray*, misprint). *Turbo vassel*, *Adans.* *Polydonta* β , *Schum.* 1817. *Fragella*, *Swains.* 1840, 332. *Apiculum*, sp. *Humph.* 1797, 26. *Mono-donta*, sp. *Lam.*; *Brown*, 1830. *Tr. pharonis*.
Otavia, *Risso*, 1826. *O. corallina*, *Risso*, f. 54.

ZIZIPHINA.

124. Ziziphinus, *Leach MSS.* 1819; *Gray*, 1840. Calliostoma, *Swains.* 1840. Labio, sp. *Oken*, 1815. Tr. Ziziphinus.
Trochilus, sp. *Humph.* 1797. T. annulatus.
125. Canthiridus, *Montf.* 1810, 251. Elenchus, sp. *Humph.* 1797, 25. Elenchus, *Swains.* 1840. Eleuchus (misprint). Phasianella c, *Menke*, 1830, 51. Monodonta, sp. *Lam.* 1822. Tr. Iris. Phasianella d, *Menke*, 1830. P. fasciata, *Menke*. Tr. badius.
126. Thalotia, *Gray, Syn.* 1840. Elenchus, sp. *Humph.* 1797? Helenchus, *Herrm.* Tr. pictus, *Gray*; *Wood, Sup.* t. 5. f. 28.
127. Monodonta, *Lam.* 1801. Monodon, *Schweiger*, 1820; *Sow.*; not *Linn.* 1735. Monodontes, *Montf.* 1810. Odontis, *Sow.* 1825. Trochidon, *Swains.* 1840, 357. Trochulus, sp. *Humph.* 1797, 26. Tr. labeo.
Trochidon, *Swains.* 1840, 351. Mon. canaliferus, *Lam.*
Diloma, *Philippi*, 1845. Troch. nigerrimus.
128. Labio, *Oken*, 1815. Osilinus, *Philippi*, 1847. Turbo osilin. *Adans.* 1757. Mon. constrictus, *Lam.*
Trochius, *Leach MSS.* 1819. Gibbium, *Gray, Syn.* 1844. Monodonta, sp. *Lam.* 1822. Tr. crassus, *Montf.*
Melagraphia, *Stentz*, 1836. Tr. æthiops.
129. Chlorostoma, *Swains.* 1840, 350. Tr. argyrostoma, *Lam.* 23.
130. Helicina, *Lamk.* 1801 (fide syn. and character); not 1813 nor 1822. Globulus, *Schum.* 1817. Rotella, *Lamk.* 1822. Trochus d, *Blainv.* Umbonicum, *Mus. Berlin.* 1818. Rot. lineolata. Helicena (dubia), *Lamk.* 1822. Rotella (Defranci), *Basterot.*
131. Otavia, *Cantraine*, 1837; not *Risso*, 1826. Monodonta, sp. limbata, *Philippi*, 1844, t. 25. f. 19. O. otaviana, *Cant.*
132. Livona, *Gray*, 1841. Turbo (Livon), *Adans.* 1757. Meleagris, *Montf.* 1810, not *Linn.* Turbo α, *Schum.* 1817. Trochus, *Swains.* 1840. Apiculum, sp. *Humph.* 1797, 26. Tigris, *Klein*, 1753? Trocus, sp. *Browne*, 1756. Turbo Pica.
Chrysostoma, *Sw.* 1840, 35. Turbo Nicobaricus.
133. Monilea, *Swains.* 1840. Talopia, *Gray, Syn.* 1842. Troch. calliferum.
134. Camitia, *Gray, Syn.* 1840. Tr. pulcherrima, *Gray.*
135. Cyclostoma, *Lam.* 1802; not 1812 nor 1822. Delphinula, *Roissy*, 1805; *Schum.* 1817; *Lam.* 1822; *Swains.* 1840. Dauphinule, *Lam.* 1812. Delphinus, *Montf.* 1810. Turbo Delphinus.
136. Liotia, *Gray, Syn.* 1840. Delphinula, sp. *Gray, Sow.* Del. cancellata, *Gray.*
137. Gibbula, *Leach MSS.* 1819; *Risso*, 1826; *Gray*, 1840. Trochus, sp. *Linn.* Tr. magus.

- Steromphala*, *Leach MSS.* 1819. *Tr. cinereus*.
Monodonta, sp. *Lam.* 1822. *Tr. declivis*, *Forsk.*
138. *Trochiscus*, *Sow.* 1838. *T. Norrisii*, *Sow.*
139. *Margarita*, *Leach*, 1819, *Ross Voy.* (not *Zol. Misc.* 1814); *Gray, Syn.* 1840. *Margarites*, *Leach MSS.* 1819. *Helix margarita*.
140. *Adeorbis*, *S. Wood*, 1842. *Trochus*, sp. *Gray, Reclus*. *Natica*?, sp. *Philippi*. *Cingula*, sp. *Flem.* *Helix subcarinata*, *Montag.*
141. ? *Solariella*, *S. Wood*, 1842. *Sol. maculata*, *Wood.*
142. *Philippia*, *Gray*, 1840 (*Phil. Sicil.* i. 174). *Solarium luteum*, *Lamk.*

STOMATELLINA.

143. *Stomatella*, *Lam.* 1822. *Stomatelle*, *Lam.* 1812. *Stomatella* α , *Blainv.* *Stom. imbricata*, *Lam.*

Fam. HALIOTIDÆ.

HALIOTINA.

144. *Broderipia*, *Gray*, 1847. *Scutella*, sp. *Brod.* 1834, not *Lamk.* *Scutella rosea*.
145. *Gena*, *Gray*, 1840, 1844, 57. *Stomatella* β , *Blainv.* 1825. *Stomatella*, sp. *Lam.* 1822. *Haliotis*, sp. *Burrows*. *Patella lutea*.
146. *Stomax*, *Montf.* 1810, 110. *Stomatia*, *Helblin*, 1879?; *Lamk.* 1801; not *Browne*, 1756. *Haliotoidea*, *Humph.* 1797, 20. *Sigaretus*?, *Schum.* 1817, 188. *Haliotis d*, *Blainv.* 1825. *Haliotis*, sp. *Chemn.*, *Dillw.* *Stom. phymotis*, *Hel.*
147. *Haliotis*, *Linn.*; *Adanson*, 1757; *Lamk.* 1801. *Auriformes*, sp. *Gevers*, 1787. *Hal. tuberculata*.
Haliotis, *Montf.* 1810. *H. assininus*.
 ? *Haliotis c*, *Blainv.* 1825. *H. dubia*, *Blainv.* Probably a monstrosity without pores: there is one in the cabinet of Mr. Alder.
148. *Padollus*, *Montf.* 1810, 115. *Padola*, *Flem.* 1828. *Padolla*, *Oken*, 1815. *Hal. tricastalis*, *Lam.*
Haliotis c, *Blainv.* 1825. *H. parva*.

DERIDOBANCHINA.

149. *Deridobanchus*, *Ehrenb.* 1831. *Derid. argus*, *Ehr.*

SCISSURELLINA.

150. *Scissurella*, *D'Orb.* 1823; *Flem.* *Trochus jun.*, *Montag.* *Haliotis vel Fissurella jun.*, *Sow.* *Sciss. lævigata*, *D'Orb.*
151. ? *Anatomus*, *Montf.* 1810, 279. *Anat. Indicus*, *Montf.*

Fam. FISSURELLIDÆ.

152. *Scutus*, *Montf.* 1810. *Parmophorus*, *Blainv.* 1825; *Swains.*

- 1840, 356. *Patella* α , *Schum.* 1817, 179. *Emarginula*, sp. Sow. *Pat. Unguis.*
- 152*. ? *Palmarium*, *Montf.* 1810, 70. *Pal. clypeatum*, *Montf.*
153. *Emarginula*, *Lam.* 1801; *Schum.* 1817, 181. *Emarginulus*, *Montf.* 1810. *Patella*, sp. *Linn.* *Patella fissura.*
Subemarginula, *Blainv.* 1825. *Hemitoma*, *Swains.* 1840, 356. *Pat. octoradiata*, *Gmel.*
Clypidina *Gray*, 1847. *Pat. notata.*
154. *Rimularia*, *Defrance.* *Rimula*, "*Defrance*," *Blainv.* 1825. *Emarginula d*, *Blainv.* 1825. *Rim. Blainvillii.*
 ? *Rimula*, *D'Orb.* *R. conica*, *D'Orb.*
 This genus is quite distinct from the following; and we have a recent species in the Brit. Mus.
155. *Diadora*, "*Gray*, 1821;" *Blainv.* 1825 (*Man.* 501). *Cemoria*, *Leach*, 1819; not *Risso*, 1826 (*Cremoria*, *error of press*). *Sypho*, *Brown*, 1827; *Reclus.* *Siphon*, *Brown*, 1844. *Puncturella*, *Lowe*, 1828. *Fissurella*, sp. *Flem.* *Fissurella* β , *Schum.* 1817. *Rimula*, *Couthouy*; *Loven*; not *Defrance.* *Patella*, sp. *Müller*, *Linn. &c.* *Diodora*, *Gray*, 1840. *Pat. Noachina.*
156. *Fissurella*, *Lam.* 1801, *Swains.* 356. *Lepas* (*Dasan*), *Adans.* *Larva*, *Humph.* 1797, 4. *Fissurellus*, *Montf.* 1810. *Pat. picta* ?
Fissurella α , *Schum.* 1817, 181. *Pat. Barbadosensis.*
Fissurella c, *Blainv.* 1825. *Pat. græca.* Young shell.
Diadora, sp. *Gray*, 1821. *Cemoria*, sp. *Leach*, 1819; not *Risso.*
Sipho, sp. *Brown*, 1827 & 1844. *Pat. apertura.*
Fissurillea, *Swains.* 1840, 356. *Fiss. pileus*, *Swains.*
Clypsidella, *Swains.* 1840, 356. *Pat. pustula.*
157. *Macrochisma.* *Macrochisma*, *Swains.* 1840, 356; *Gray*, 1840. *Larva*, sp. *Humph.* 1897, 4. *Fissurella*, sp. Sow. *Pat. macrochisma.*
158. *Fissurellidæa*, *D'Orbigny*, 184 ? *Fissurella*, sp. *Lam.* 1822. *Fiss. hiatula*, *Lam.*
159. *Pupillia*, *Gray*, 1840, 114; 1844, 58. *Fissurella*, sp. Sow. "*Pupillaca*, *Gray*," *Philippi*, ii. 90. *Pat. apertura*, *Born.*
160. *Lucapina*, *Gray*, 1840; 1844, 58. *Fissurella aperta*, Sow. *Lucap. elegans*, *Gray.*

Fam. NERITIDÆ.

NERITINA.

161. *Nerita*, *Linn.*; *Adans.* 1757; *Lam.* 1801. *Peloronta*, *Oken*, 1815. *N. exuvia.*
Nerita, *Montf.* 1810. *Peloronta*, sp. *Oken.* *N. peloronta.*
162. *Velates*, *Montf.* 1810, 354. *Nerita*, *Blainv.* 1825. *Nerita*, sp. *Chemn.* *Neritina perversa*, *Lam.*

163. *Pileolus*, *J. Sow.*, 183 ? *Desh.* *Nerita* *H. Blainv.* 1825. *Pileolus plicatus*.
Calana, *Gray*, 1844. *Pileolus*, sp. *Desh.* *Pileol. altevelensis*.

NERITELLINA.

164. *Neritella*, *Humph.* 1797. *Neritina*, *Lam.* 1822. *Neritine*, *Lam.* 1812. *Nerita pulligera*.
Neritina, *Swains.* 1840. *Neritella*, sp. *Humph.* *N. Meleagris*.
Theodoxus, *Montf.* 1810. *Nereina*, *Christ. & Jans.* 1832; not *Defrance*. *Neritella*, sp. *Humph.* *Neritina*, sp. *Lam.* *Ner. fluviatilis*.
Neripteron, *Lesson*, 1830. *Neripterum*, *Herrm.* 1847. *Neritina auriculata*, *Lam.*
Clithon, *Montf.* 1810, 326; *Swains.* 347, 1840. *Nerita* β , *Schum.* 1817. *Neritella*, sp. *Humph.* *Cliton*, *Lesson*. *Ner. corona*.
Dostia, *Gray*, *Syn.* 1840; 1844, 58. *Cliton*, sp. *Lesson*. *N. crepidularia*.
165. *Catillus*, *Humph.* 1797, 57. *Cimber*, *Montf.* 1810, 82. *Navicella*, *Lam.* 1822. *Navicelle*, *Lam.* 1812. *Septaria*, *Feruss., Blainv.* 1825. *Nerita porcellana*.

Fam. AMPULLARIADÆ.

166. *Ampullaria*, *Lam.* 1801. *Pomus*, *Humph.* sp. 1779, 58. *Pomacea*, sp. *Perry*. *Bulimus*, sp. *Brug.* *Nerita*, sp. *Müller*.
Ampullarius, *Montf.* 1810. *Pachylabra*, *Swains.* 1840. *Pachystoma*, *Guild.* 1828; not *Swains.* *Nerita urceus*.
167. *Marisa*, *Gray*, 1824. *Ceratodes*, *Guilding*, 1828. *Planorbis*, sp. *Müller*; *Lamk.* 1822. *Marissa*, *Menke*. *Helix cornu arietis*.
168. *Pomus*, *Humph.* 1779, 58. *Ampullaria*, *Guild.* 1828; *Swains.* 1840. *Hel. ampullacea*.
169. *Lanistes*, *Montf.* 1810, 122. *Helix*, sp. *Linn.* *Cyclostoma*, sp. *Olivier*. *Helix Bolteniana*.
Lanites, *Swains.* 1840. *Helix guineaica*.
170. ? *Meladomus*, *Swains.* 1840. *Lanistes*, sp. *Troschel*, 1847. *Paludina*, sp. *Sow.* *Pal. olivacea*, *Sow.*
171. *Pomella* ? *Ampullaria*, sp. *D'Orb.* *Amp. neritoides*, *D'Orb.*
172. *Asolene*, *D'Orb.* 1837; *Gray*, 1840. *Ampullaroides*, *D'Orb.* 1838, 379. *Helix plateæ*, *Maton*.

Fam. IANTHINIDÆ.

173. *Ianthina*, *Bolten*, 1798; *Lam.* 1801. *Neritoidea*, *Humph.* 1797, 20. *Ianthinus*, *Montf.* 1810. *Iodes*, *Leach MSS.* 1819. *Helix Ianthina*.

Fam. ATLANTIDÆ.

174. *Oxygyrus*, *Benson*, 1835. *Ladas*, *Cantraine*, 1839; *Philippi*.

- Helicophlegma*, *D'Orbigny*, 1839. *Atlanta*, sp. *Rang.* *Atlanta Keraudrenii*, *Rang.*
Brownia, *D'Orb.* 1841. *Helicophlegma*, sp. *D'Orb.* *Hel. Candei*, *D'Orb.*
 175. *Atlanta*, *Lesueur (Journ. Phys.)*; *Blainv.* 1825; *D'Orb.* *Corne d'Ammon*, *Lamon.* *Atlanta Peronii*, *Les.*
 176. *Steira (Lamanoni)*, *Eschsch.*; *Isis*, 1825, 734. t. 5. f. 3.
 177. *Heterofusus*, *Flem.* 1833. *Limacina*, sp. *Benson.* *Fusus*, sp. *Flem.* *Helicophora*, *Gray*, 1840; 1844, 59. *Atlanta Heliconoides*, sp. *D'Orb.* 184 ? *Peracle*, *Forbes*, 1843. *Scaea*, *Philippi*, 1844. *Fusus retroversus*, *Flem.*
 178. ? *Heliconoides*, sp. *D'Orb.*
 179. ? *Campylonaus*, *Benson*, 1835. *Atlanta (reticula)*, *D'Orb.*

Sect. II. ERIOPHTHALMA.

Fam. NATICIDÆ.

NATICINA, operc. shelly.

180. *Natica*, *Lam.* 1801. *Naticus*, *Montf.* 1810; *Megerle*, 1811. *Natica α*, *Schum.* 1817. *Neritiformes*, sp. *Gevers*, 1787. *Lunatus*, sp. *Humph.* 1797. *Nerita canrena*.
Nacca, *Risso*, 1826; *Gray*, 1844, 60. *Natica (gochet)*, *Adans.* 1757. *N. fulminea*.
Natica (Natic), *Adans.* 1757. *N. — — ?*
Natica, *Swains.* 1840. *N. lineata*.
Natica, *Leach*, 1819. *N. fragilis*, *Leach*.
 181. *Deshayesia*, *Raulin*, 1844. *Nat. mutabilis*, *Desh.*

POLINICINA, operc. horny.

182. *Neverita*, *Risso*, 1826, f. 43. *Natica*, sp. *Lam.* 1822. *Nat. glaucina*, *Lam.*
 183. *Lunatia*. *Natica*, sp. *Lam.* 1822. *Lunatus*, sp. *Humph.* *N. ampullaria*, *Lam.*
Natica, *Risso*, 1826 (not *Lam.* 1801); *Gray*, 1844, 60. *N. glaucina*, *Risso*.
 184. *Cepatia*, *Gay*, 1840; 1844, 60. *N. cepacca*, *Lam.*
 185. *Polinices*, *Montf.* 1810. *Natica*, sp. *Scopoli*, 1777; *Lam.* 1822. *Uber*, sp. *Humph.* 1797, 21. *Mammilla*, *Gray*, 1840. *Nerita*, sp. *Browne*, 1756. *Ner. mammilla*.
Naticella, *Guild.*, *Swains.* 1840. *N. aurantia*.
Natica β, *Schum.* 1817. *N. albumen*.
Naticina, *Guild.* *Mammillaria*, *Swains.* 1840. *Nat. lactea*, *Guild.*
 186. *Mammilla*, *Schum.* 1817; not *Gray*, 1840. *Ruma*, *Chemn.* *Naticaria*, sp. *Swains.* 1840; *Gray*, *Syn.* 1844, 60. *N. melanastoma*.
Ruma, sp. *Chemn.* *Uber*, sp. *Humph.* *Nat. Maura*.

187. *Cernina*, *Gray, Syn.* 1840; 1844, 60. *Globularia*, sp. *Swains.* 1840. Oper. —? *Nat. fluctuata*, *Sow.*
188. *Globulus*, *J. Sowerby*, 18 ? *Globularia*, sp. *Swains.* 1840. *Ampullaria*, *Flem.* *Nat. Sigaretina.*
189. ? *Laguncula*, *Benson*, 1842. *Bensonina*, *Cantor MSS.* Oper. —? *L. pulchella*, *Benson.*
190. *Naticina*, *Gray, Syn.* 1840, 90. *Naticaria*, sp. *Swains.* 1840, 346; *Gray*, 1840, 60. *Nat. papilla.*
191. *Stomatia*, *Browne*, 1756; *Hill*, 17 ? not *Lamk.* *Sigaretus*, *Lam.* 1801 (shell only); *Montf.* 1810. *Haliotis* (*Sigaret*), *Adans.* 1757. *Auriformes* **, *Gevers*, 1789. *Sigaretus b*, *Blainv.* *Cryptostoma*, *Blainv.* 1825. *Auris Veneris*, *Humph.* 1797, 20. *Velutina*, sp. *Flem.* *Helix Haliotoides.*
Oxinoë, *Rafn.*; *Blainv.*; not *Couthouy.* *Oxinoë olivacea.*

Fam. ? NERITOPSIDÆ.

192. *Neritopsis*, *Grateloup*, 18 ?; *Gray*, 1839; *Swains.* 1840. *Nerilopsis*, *D'Orb.* (misprint?). *Nerita radula.*
Radula, *Gray, Syn.* 1844, 60. *Nerita granulata.*
 Animal of this family not yet known.

Fam. LITTORINIDÆ.

193. *Assimineæ*, *Leach*, 1819; *Fleming*, 1828; *Berkeley*, *Benson.* *Syncera*, *Gray*, 1821. *Lymnea*, *Jeffreys.* *Assamineæ*, *Gray*, 1839, 141. *A. Grayiana*, *Leach.*
194. *Littorina*, *Feruss.* *Trochus*, *Adans.* 1757; not *Linn.* *Litorina*, *Loven.* *Turbo*, *Philippi.* *Turbo*, sp. *Linn.* ? *Lunella*, *Bolten*, 1798. *T. littoreus.*
Neritoides, *Brown*, 1837. *Nerita littoralis.*
Phasianella, sp. *Lam.* 1822. *Turbo γ*, *Schum.* *Helix scabra.*
Trochus, *Adans.* 1757; not *Linn.* *Turbo punctatus.*
Melaraphis, *Stentz*, 1836. *Melarapha*, *Megerle*, 1832. *Paludina*, sp. *Stentz.* *Rissoa*, sp. *Risso*, 1826. *Turbo petrea.*
195. *Risella*, *Gray*, 1840, 1844. *Littorina* §, *Gray*, 1839. *Bembicium*, *Philippi*, 1846. *Tr. melanastomus.*
196. *Pagodus*, *Gray*, 1839. *Pagodella*, *Swains.* 1840, 351. *Littorina*, sp. *Desh.*; *Philippi*, 1846. *Monodonta*, sp. *Lam.* 1822. *Turbo Pagodus.*
Echinella, *Swains.* 1840, 35. *Monodonta coronaria*, *Lam.*
197. *Modulus*, *Gray*, 1840, 1844. *Turbo*, sp. (*Lonier*), *Adans.* *Monodonta*, sp. *Lam.* 1822. *Trochus modulus.*
Monodonta, *Swains.* 1840; not *Lam.* 1801. *Tr. tectum.*
198. *Lithoglyphus*, “*Megerle*,” *Hartm.* 1821; *Zeigler.* *Lithoclyptus*, *Christ. & Jans.* 1832. *Paludina*, sp. *Menke.* *Paludina fusca*, *Pfeiffer.*
Neritina, sp. *Feruss.* *Paludina*, sp. *Menke.* *Palud. Naticoides.*

- Paludina, sp. *Say*. Paludestina, sp. *D'Orb*. Amnicola, sp. *Anthony*. Pal. lapidaria.
199. Hydrobia, *Hartmann*, 1821. Paludestina, sp. *D'Orb*. 1838 ; *Gray*, 1840. Paludina, sp. *Drap*. Litorinella, *Braun*, 1843 ; *Thomas*, 1845. Cyclostoma, sp. *Drap*. Paludina acuta. Leachia, sp. *Risso*, 1826. Paludina, sp. *Menke*, 1830. Turbo, sp. *Martens*. Cyclostoma vitreum, *Drap*. Paludina, *Guild*. 1828 ; not *Lam*. 1801 ; *Swains*. 1840. Palud. parvula, *Guild*. Amnicola, sp. *Anthony*. Melania, sp. *Say*. Paludina, sp. *Lea*. Melan. isogona. Sabineia, *Leach MSS*. 1819, *Sow*. 1842. Paludinella, *Pfeiffer*, 184 ? ; *Loven*, 1846 ; not *Gervais*. Paludina, sp. *Flem.*, *Drap*. ? Cingula, sp. *Flem*. Littorina, sp. *Hanley*. Rissoa ?, sp. *Alder*. Turbo Ulva. Paludinella, *Beck* ; *Moller*, 1842. Trochus saxatilis, *O. Fab*. ? Rissoa, *Berkeley* (not *Risso* ?). Turbo subumbilicatus, *Montag*.
200. Architectoma, *Bolten*, 1798. Solarium, *Lam*. 1801, *Montf*. 1810, *Swains*. 1840. Physeter, *Humph*. 1797 ; not *Linn*. Trochus perspectivus. Solarium, sp. *Lam*. Sol. patulum.
201. Torinia, *Gray*, 1840, 1842. Heliacus, *D'Orb*. 1842. Physeter, sp. *Humph*. Solarium, sp. *Lam*. 1822. Solarium β , *Schum*. 1817. Trochus cylindraceus.
202. ? Omalaxis, *Desh*. 1830. Bifrontia, *Desh*. 1833 ?, *Gray*, 1840. Omolaxon or Omalaxon, *Agassiz*. Solarium, sp. *Lamk*. Solarium disgunetum, *Lam*. Bifrontia, sp. *Desh*. Sol. bifrons. Schizostoma, *Bronn*, 1841 ? Euomphalus, sp. *J. Sow*. Bifrontia Catillus, *Desh*.
203. ? Orbis (rotella), *Lea*, 1833. Orbis (foliaceus), *Philippi*, 1844, t. 24. f. 26. Bifrontia ? (zanclosa), *Philippi*, 1844, t. 28. f. 11. Pteropodes ??
204. ? Cyclogyra multiplex, *S. Wood*, 1842. An annelide ?
205. ? Planaria, *T. Brown*, 1827 ; not *Linn*. P. pellucida. Planaria, *J. Lea*, 1833. Pl. nitens. — Pteropodes ?
206. Forsar, *Gray, Syn*. 1840. Natica (fosar), *Adans*. 1757. Forsarus, *Philippi*, 1841, 1844. Maravignia, *Aradas, & Mag*. 184 ? Natica (animal, not shell), *Lam*. 1801, *Rang*. Delphinula, sp. *Philippi*, 1836. Rissoa, sp. *Scacchi*. Nerita, sp. *Brocchi*. Purpura, sp. *Sow*. Sigaretus, sp. *Serres*. ? Naticella, *Munster*, 1841. Turbo, sp. *Michaud*. Helix ambigua, *Linn*. Pharianema (sulcata), *S. Wood*, 1842.
207. Nematura, *Benson*, 1836. N. Deltae.
208. Lacuna, *Turton*, 1828. Temana, *Leach MSS*. 1819. Lutea, *T. Brown*, 1827. Natica, sp. *Flem*. Nerita pallidula, *M*.

- Epheria*, *Leach MSS.* 1819. *Lacuna*, sp. *Turton*. *Phasianella*, sp. *T. Brown*, 1827. *Turbo vineta*.
Medoria, *Leach MSS.* 1819; *Gray*, 1819. *Lacuna*, sp. *Turt.*
Turbo crassior.

Fam. MELANIADÆ.

RISSOAINA.

209. *Rissoa*, *Fremenville*, 1814; *Risso*, 1826. *Alvania*, sp. *Risso*, 1826 (not *S. Wood*). *Loxostoma*, *Bivon*. *Cingula*, sp. *Flem.* 1828. *Helix labiosa*.
Acme (acicula), *Hartm.* 1821; *Christ. & Jans.* 1822. *Rissoa*, sp. (acuta), *Desm.* *Turbo auriscalpium*.
Alvania, sp. *Risso*, 1826. *Rissoa*, sp. *Desm.* *Turbonella*, sp. *Leach*, 1819. *Turbo Callathriscus*.
Cyclostrema, *Flem.* 1828, not *Marryat*. *Turboella*, sp. *Leach*, 1819. *Alvania*?, sp. *Leach*, 1817. *Rissoa*, sp. (clathrata), *Philippi*. *Turbo Zetlandica*.
Turboella, sp. *Leach*, 1819. *Rissoa*, sp. *Desm.* *Turbo parvus*, *Montag.*
Turbona, *Leach*, 1819. *Turbo reticulatus*, *Montag.*
Turbonilla, *Leach MSS.* 1819. *Turbo striatus*, *Montag.*
210. *Cingula*, sp. *Flem.* 1824, 1828. *Rissoa b*, *Philippi*, 1844. *Sabanea*, sp. *Leach MSS.* 1819. *Turbo cingillus*, *Montag.*
211. *Alvania*, *S. Wood*, 1842; *Leach MSS.* 1819. *Alvania*, sp. ? *Risso*, 1826. *Anclis*, *Loven*, 1844. *Alv. supranitida*.
212. *Rissoina*, *D'Orb.* 184 ? *Rissoina Inca*, *D'Orb.*
Mangelia, sp. *Risso*, 1826 (f. 102, 103). *Strombus*, sp. *Megerle*.
Mang. reticulata.
Rissoa c. (*Bruguieri*), *Philippi*. *Nassa*, sp. *Brown*. *Cingula*, sp. *Flem.* *Turbo Bryerii*, *Montag.*
213. *Skenea*, *Flem.* 1824, 1828. *Delphinoidea*, *T. Brown*, 1827. *Truncatella*, sp. (? *atomus*), *Philippi*?. *Helix Serpuloides*, *Montag.*

MELANIAINA.

214. *Thiara*, *Megerle*, 18 ?; *Menke*, 1830; *Gray*. *Melanella*, *Swains.* 1840, 341. *Melania Holandri*, *Feruss.*
215. *Melania*, *Lam.* 1801; *Schum.* 1817, 201. *Melas*, *Montf.* 1810. *Melacanthus*, *Swains.* 1840, 341. *Amarula*, *G. B. Sow.* 1842. *Tiara*, sp. *Bolten*, 1798; *Gray*, 1846; not *Swains.* *Vesica*, sp. *Humph.* 1797. *Spirilla*, *Humph. MSS.* *Buccinum*, sp. *Müller.* *Bulimus*, sp. *Brug.* *Helix amarula*.
Potadoma, *Swains.* 1840, 341. *Melania Freethi*, *Gray.*
Melanoides, *Olivier*, 1807. *Strombus*, sp. *Schroet.* *Nerita*, sp. *Müller.* *Mel. fasciolata*.
216. *Pachystoma*, *Gray*, 1840; 1844, 61. *Mel. marginata*, *Lam.*

217. *Pyrgula* (annulata), *Crist. & Jans.* 1832. *Melania*, sp. *Desh.*
Mel. helvetica, *Mich.*
218. ? *Tricula*, *Benson*, 1842. *Tri. montana*, *Benson.*
219. ? *Tanalia*, *Gray.* *Paludomus*, sp. *Reeve.* *Nerita*, sp. *Gmel.*,
Chemn. *Nerita aculeata.* *Oper.* — ?
220. *Hemisinus*, *Swains.* 1840, 341. *Tania*, *Gray*, 1840 ; 1844, 60.
Mel. lineolata, *Gray.*
Melania, sp. *Pfeiffer.* *M. Ferussacii.*
221. *Vibex*, *Oken*, 1815 ; *Gray*, 1840. *Ligula*, sp. *Humph.* 1797.
Pirena, sp. *Lam.* 1822. *Strombus*, sp. *Gmelin.* *Nerita*, sp.
Müller. *Melania*, sp. *Feruss.*, *Desh.* *Bulimus*, sp. *Brug.* *Nerita aurita.*
Melania, *Swains.* 1840. *Mel. quadriseriata.*
222. *Melanatria*, *Bowdich*, 1822 ? *Pyrena*, sp. *Lam.* *Melanopsis*,
sp. *Desh.* *Helix*, sp. *Dillw.* *Buccinum flumineum.*
223. *Lampania*, *Gray*, 1840 ; 1844, 60. *Batillaria*, *Benson*, 1842.
Cerithium zonale, *Lam.*
224. *Anculotus*, *Say*, 1825. *Anculosa*, *Swains.* 1840, not *Conrad.*
Anc. præmorsa, *Say.*
Melanopsis, sp. *Moricand.* *M. Crenocarina.*
Anculosa, *Conrad*, 1834. *Omphemis*, sp. *Chenu.* *Melania*, sp.
Say. *Anc. dissimilis.*
Anculosa, sp. *Anthony.* *Anc. rubiginosa.*
Melania, sp. *Say.* *Melan. obovata.*
225. *Melatoma*, *Anthony*, 184 ? ; not *Swains.* 1840. *Melat. altilis*,
Anth.
226. *Io*, *J. Lea*, 1832. *Fusus*, sp. *Say*, 1825. *Melafusus*, *Swains.*
1840, 341. *Fusus fluviatilis*, *Say.*
Melania, sp. *Say.* *Mel. armigera*, *Say.*
227. *Ceriphasia*, *Swains.* 1840 ; *Gray, Syn.* 1844. *Melania*, sp. ? *Say.*
Ceriphasis sulcatus, *Sw.*
? *Telescopella.* *Melania*, sp. *Say.* *Mel. undulata*, *Say.*
228. *Melanopsis*, *Lam.* 1822. *Melanopside*, *Lam.* 1812. *Nana*,
Schum. 1817, 225. *Buccinum*, sp. *Clarke.* *Canthidomus*,
Swains. 1840, 342. *Faunus*, *Megerle*, 18 ? *Melanithes*, *Swains.*
1840, 341. *Plotia*, sp. *Bolten*, 1798. *Melania*, sp. *Olivier.*
Melan. costata.
Melanopsis, *Swains.* 1840, 341 ; *M. sp. Lam.* *Bulimus*, sp. *Lam.*
Bucc. prærosum.
229. *Faunus*, *Montf.* 1810 (Junior). *Pirena*, *Lam.* 1822 ; *Swains.*
1840. *Pyrene*, *Lam.* 1812. *Ligula*, sp. *Humph.* 1797, not
Montag. *Melanamona*, *Bowdich*, 1820. *Ebena*, *Schum.* 1817.
Melanopsis, sp. *Ferus.* *Nerita*, sp. *Müller.* *Cerithium*, sp.
Brug. *Buccinum*, sp. *Solander.* *Strombus ater.*
230. *Clionella*. *Pleurotoma*, sp. *Lam.* *Buccinum*, sp. *Gmel.* *Bucc.*
sinuatum.

231. ? Potamidis, 18 ? Potamide, *Brong.* (*Geol. Paris, Ann. Mus.* xv. t. 22. f. 3). *Cerithium*, sp. *Desh.* *P. Lamarckii*, *Brong.*
232. ? Potamidum, *Flem.* 1828 (*Sow. M. C. t.* 341. f. 1 & 2). *P. acutum.*
233. *Cerithium*, *Adans.* 1757 ; *Brug.* ; *Lam.* 1822. *C.* (Popel), *Adans.* *Murex radula.*
Cerithium, *Montf.* 1810, 511. *Rhinoclavis*, sp. *Swains.* 1840, 315. *Mur. vertagus.*
Cerithium γ , *Schum.* 1817. *Rhinoclavis*, sp. *Swains.* 1840, 315. *Mur. aluco.*
Cerithium, *Lam.* 1801, *Swains.* 1840, 316. *Cerithium* β , *Schum.* 1817. *C. nodulosum*, *Brug.*
234. *Bittium*, *Leach MSS.* 1819. *Terebra*, sp. *Flem.* *Strombiformis*, sp. *Da Costa.* *Nassa*, sp. *Say.* *Mur. reticulatus*, *Mont.*
235. *Pirenella.* *Cerithium*, sp. *Risso*, 1826 ; *Philippi.* *Pyrena*, sp. (*nigra*), *Ch. & Jans.* *Cerithium mammillatum*, *Philippi.*
 ? *Cerithium*, sp. *Lam.*, *Sow.* *Cer. tuberculatum*, *Sow.*
Cerithium torulosum, *Brug.*, *Lam.* ii. 27, is only a monstrosity of *Cerithium vulgatum.*
236. *Cerithidea*, *Swains.* 1840. *Potamides*, *Gray*, 1840. *Cerithium* (sp. 16), *Lam.* 1822. *Turbo*, sp. *Dillw.* *Murex decollatus.*
Cerithium, *Flem.* 1828. *Strombiformis*, sp. *Da Costa.* *Strombus costatus.*
237. *Tympanotomos*, *Klein*, 1753 ; *Schum.* 1817, 211. *Tympanotomus*, *Gray*, 1840. *Potomis*, *Swains.* 1840. *Nerita*, sp. *Müller.* *Ligula*, sp. *Humph.* 1797. *Potamis* or *Potamides*, *Sow. Man.* 236. *Murex fuscatus*, *Linn.*
238. *Telescopium*, *Chemn.* ; *Montf.* 1810, 439 ; *Schum.* 1817, 233. *Terebralia*, sp. *Swains.* 1840, 315. *Cerithium*, sp. *Brug.* *Trochus Telescopium.*
239. *Glottella.* *Melania armigera*, *Say.*
240. *Pyrasus*, *Montf.* 1810, 459. *Terebralia*, sp. *Swains.* 1840, 315. *Cerithium a*, *Schum.* 1817, 224. *C.* (potamide), *Blainv.* 1825. *Potamides*, *Cuvier*, 1817. *Strombus palustre.*

TRIPHORINA.

241. *Triphoris*, *Desh.* "1824," 1830. *Triphore*, *Desh.* *Triphorus*, *Swains.* 1840, 342. *Triphora*, *G. Sow.* *Triph. plicatus*, *Desh.* *Tristoma*, *Blainv.* (not *Desh.* ; see *E. M.* 1053) ; not *Cuvier.* *Triphoris*, sp. *Desh.* *Cerith. tristoma*, *Blainv.*
Bittium, sp. *Leach*, 1819. *Mastonia*, sp. *Loven.* *Terebra*, sp. *Flem.* *Cerithium*, sp. *Lam.* *Mur. adversum*, *Montag.*
Mastonia, *Hinds*, 1842. *Tri. vulpinus.*
Sychar, *Hinds*, 1844. *Triph. vitreus.*
Ino, *Hinds*, 1844. *Triph. gigas.*

242. *Terebellum*, *Browne*, 1756, not *Lam.* *Haustator*, *Montf.* 1810, 182. *Turbo imbricatus*.
Turritella, *Lam.* 1801; *Montf.* 1810, 211. *Monocerotes*, sp. *Gevers*, 1787. *Terebra*, sp. *Humph.* *Turbo Terebra*, *Linn.*
Turritella β , *Schum.* 1817. *Tur. striata*, *Schum.*
243. *Torcula*. *Haustator*, *Gray*, 1840; 1844, 60; not *Montf.* *Turritella*, sp. (*biangulata*), *Lam.* *Turbo exoletus*, *Linn.*
244. *Zaria*, *Gray*, 1840; 1844, 60. *Turritella a*, *Schum.* 1817, 199. *Turbo duplicatus*.
245. *Mesalia*, *Gray*, 1840; 1844, 60. *Cerithium Mesal*, *Adans.* 1757. *Turritella Mesal*, *Desh.*
Turritella, sp. *Lam.* *Tur. sulcata*, *Lam.*
246. *Proto*, *Defrance*, 183 ? *Turritella*, sp. *Basterot*, 1825. *Proto cathedralis*.
247. *Eglisia*, *Gray*, 1840; 1844, 60. *Turritella*, sp. *Sow.* *Turbo suturalis*, *Gray*.

SCALARINA.

248. *Scalaria*, *Lam.* 1801. *Scalarus*, *Montf.* 1810, 295. *Acione*, *Leach*, 1815. *Acionæa*, *Desh.* *Aciona*, *Bowd.* *Scala*, sp. *Humph.* 1797. *Trochus*, sp. *Browne*, 1756. *Turbo scalaris*.
Clathrus, *Oken*, 1815. *Cyclostoma*, *Schum.* 1817, 196; not *Lam.* *Turbo clathrus*.
Clathrus, *Gray*, 1840. *Scal. australis*.
Cyclostrema, *Leach?*; *Maryatt*, *Linn. Trans.* *Cycl. cancellata*.
Lippistes, *Montf.* 1810, 127 (copied from *Fichtel*, t. 1), perhaps the young of the former. *Argonauta cornu*, *Ficht.*
249. ? *Anatola*, *Audouin*, 1827. *Pteropode??* from *Savigny, Egypt. Moll.* t. 5. f. 1.

? LITIOPINA.

250. *Litiopa*, *Rang*, 1829. *Bombyxinus*, *Lesson*, 1834. *Litiopa bombix*, *Kiener*.

Fam. VIVIPARIDÆ.

251. *Viviparus*. *Vivipare*, *Cuvier*, 1808; *Lamk.* 1809. *Viviparus*, *Montf.* 1810. *Paludine*, *Lam.* 1812. *Paludina*, *Lamk.* 1822. *Neritina*, sp. *Müller.* *Cyclostoma*, sp. *Drap.* *Bulimus*, sp. *Brug.* *Lymnea*, sp. *Flem.* *Helix vivipara*.
Paludina, sp. *Menke.* *Helix fluviatilis*.
252. ? *Paludomus*, *Swains.* 1840, 340. *Melania*, sp. *Gray.* *Melania conica*.
? *Hemimitra*, *Swains.* 1840. *Hem. retusa*, *Swains.*
253. *Bithinia*, *Prideaux MSS.*; *Gray*, 1824; *Risso*, 1826; *Benson.* *Nerita*, sp. *Müller.* *Cyclostoma*, sp. *Drap.* *Paludina*, sp. *Lam.* 1822. *Lymnea*, sp. *Flem.* *Bulimus*, sp. *Poiret.* *Helix tentaculata*.

Fam. VALVATIDÆ.

254. *Valvata*, Müller, 1774; *Lam.* 1822. *Valvée*, *Lam.* 1812. *Gyrorbis*, *Fitz.* 1838. *Valvata cristata*.
Cyclostoma, sp. *Drap.* *Nerita*, sp. *Müller.* *Valvata*, sp. *Lam.*
Helix piscinalis.

Fam. VELUTINIDÆ.

255. *Velutina*, *Flem.* 1822; *Blainv.* 1825. *Galericulum*, *Brown*, 1827, 1844. *Helix*, sp. *Fab.* *Bulla*, sp. *Müller.* *Helix lævigata*.
Velutella. *Bulla*, sp. *Laskey.* *Sigaretus*?, sp. *Flem.* *Velutina*, sp. *Lovèn.* *Bulla flexilis*.
Otina. *Velutina*, sp. *Flem.* *Helix Otis*.
Oxinoë?, *Couthouy*, 1839, not *Rafn.* *O. glabra*, *Couth.*

Fam. VANICOROIDÆ.

256. *Vanicoro*, *Quoy & Gaim.* 18 ? *Velutina*, sp. *Quoy & Gaim.* 18 ? *Merria*, *Gray*, 1839; 1841, 124. *Narica*, *Reclus*, 1844; *D'Orb.* 1836 (name only). *Leucotis*, *Swains.* 1840. *Leucotus*, *G. B. Sow.* *Sigaretus*, sp. *Lam.* 1822. *Nerita*, sp. *Chemn.* *Nioma*, *Gray*, 1840, 124. *Neritopsis*, sp. *Sow. Gen.* *Nerita cancellata*, *Chem.*

Reclus' claims to this genus are not borne out by the examination of *D'Orbigny*, who in 1841 (*Cuba*, ii. 39) states, *M. Reclus* "has the intention" to form a genus; *M. Quoy* has the undoubted priority.

Fam. VERMETIDÆ.

257. *Vermetus* (*Vermet*), *Adans.* 1757, *Lam.* 1812. *Vermicularia*, *Lam.* 1801. *Serpula*, *Scopoli*, 1777; not *Linn.* ? *Siphonium*, sp. *Browne*, 1756. *Vermicularius*, *Montf.* 1810. *Serpula lumbricalis*.
Vermetus, *Gray*, 1844, 62. *Serpula*, sp. *Sow.* *Serpula maxima*, *Sow.*
258. *Bivonia*, *Gray*, 1840; 1844, 62, 90 (*Bivinæ*, error). *Vermicularia* β, *Schum.* 1817? *Vermet. glomeratus*, *Bivon.*
259. *Serpulorbis*, *Sassi*, 1827. *Serpula*, sp. *Lam.* *Vermetus*, sp. *Bivon & Philippi.* *Serpula arenaria*.
Hatina, *Gray*, 1844, 62. *Verm. inoperculatus*.
260. *Lemintina* or *Lementina*, *Risso*, 1826. *Lem. Cuvieri*.
261. *Siliquaria*, *Lam.* 1801. *Siliquarius*, *Montf.* 1810. *Anguinaria*, *Schum.* 1817. *Serpula anguina*.
Anguinaria β, *Schum.* 1817. *Ang. sulcata*.
262. *Spiroglyphus*, *Daud.* 1800; *Gray*, 1839. *Vermetus*, sp. *D'Orb.* *Spirog.* —?.

Fam. CAPULIDÆ.

263. *Capulus*, *Montf.* 1810, *Sow.* *Le Cabochon*, *Lam.* 1812. *Pileopsis a*, *Lam.* 1822, *D'Orb.*, *Swains.* 357. *Ancilla*, sp. *Gevers*, 1787. *Amalthea β*, *Schum.* 1817, 183. *Patella ungarica*.
Spiricella, *Rang.* 1829. *Spir. unguiculus*, *Rang.*
264. *Hipponix* (*Hipponice*), *Defrance*, 1819, *Desh.* *Patella*, sp. *Lam.*
Pileopsis b, *Lam.* 1822. *Pat. cornucopia*.
Hipponix, sp. *Defrance*. *Pileopsis a*, sp. *Lam.* 1822. *Patella*, sp. *Gmel.* *Pat. mitrula*.
265. *Amalthea a*, *Schum.* 1817, t. 21. f. 4. *Sabia*, *Gray*, 1833; 1844, 63. *Hipponix*, sp. *Quoy & Gaim.*, *Desh.* *Patella*, sp. *Lam.* *Amalthea conica*.
266. *Brocchia*, *Bronn*, *Philippi*, *Gray*. *Pileopsis*, sp. *Kœnig*. *Patella*, sp. *Brocchi*. *Patella sinuosa*.
267. *Amathina*, *Gray*, *Syn.* 1840; 1844, 63. *Pileopsis*, sp. *Desh.* 1830. *Patella tricarinata*.

Fam. CALYPTRADÆ.

268. *Crypta*, *Humph.* 1797. *Crepidula*, *Lam.* 1801. *Crepidulus*, *Montf.* 1810. *Sandalium*, *Schum.* 1817, 183. *Ancilla*, sp. *Gevers*, 1787. *Lepas*, sp. (garnot and sulin), *Adans.* *Patella fornicata*.
Crepidula, *Lesson*, 1830. *Crep. navicella*.
Crepipatella, *Lesson*, 1830. *Calyp. Adolphei*.
Crepipatella, *Brod.* 1834. *Calyp. foliacea*.
269. *Galerus*, *Humph.* 1797. *Trochita α*, *Schum.* 1817, 184. *Ancilla*, sp. *Gevers*, 1778. *Mitrula*, *Gray*, 1821. *Calyptræa*, sp. *Lam.* 1822. *Trochilea*, *Swains.* 1837. *Trochilla*, sp. *Swains.* 1840, 355. *Patella chinensis*.
? *Sigapatella*, *Lesson*, 1830. *Calyp. Novæ Zelandiæ*.
Bicatillus, *Swains.* 1840, 35. *Calyp. extensorium*, *Sow.*; not *Lam.*
270. *Crucibulum*, *Schum.* 1817. *Dispotea*, *Say*, 18 ? *Calypeopsis*, *D'Orb.* 184 ? *Calyptra*, sp. *Humph.* 1779. *Calyptræa*, sp. *Lam.*, *Sow.*, *Menke*. *Biconia*, *Swains.* 1840, 355. *Bicatillus*, sp. *Swains.* 354. *Patella auriculata*.
Calypeopsis, *Lesson*, 1830. *Calyp. tubifera*.
Calypeopsis, *Brod.* 1824. *Calyp. spinosa*.
Calyptræa α, *Brod.* 1834. *Calyp. rudis*.
271. *Calyptra*, sp. *Humph.* 1797. *Calyptræa*, *Lam.* 1801, *D'Orb.*, *Swains.* *Calyptrus*, *Montf.* 1810. *Calyptria*, *Lesson*, 1830. *Mitrularia*, *Schum.* 1817. *Cemoria*, *Risso*, 1826; not *Leach*, 1819, nor *Swains.* *Litholepas*, *Owen*, *P. Z. S.* *Ancilla*, sp. *Gevers*, 1787. *Pat. equestris*.
Calyptra, sp. *Humph.* *P. tectum chinensis*.
Calyptræa β, *Brod.* 1834. *Calyp. corrugata*.

272. *Trochita*, *Schum.* 1817, 184. *Infundibulum*, *D'Orb.* 1846; not *Montf.* 1810. *Trochus*, sp. *Lam.* 1822. *Trochatella*, *Lesson*, 1830. *Calyptraea*, sp. *Sow. Gen.* *Lepas concamerata*, *Martini*. *Patella Trochoides*.
Infundibulum, *J. Sow.*; not *Montf.* *Calyptraea*, sp. *Desh.* *Trochus apertus*.
Trochilla, sp. *Swains.* 1840, 354. *Trochus pileus*.
Halioidea, *Swains.* 1840, 354. *Calyptraea*, sp. *Sow.* *Calyp. dilatata*, *Sow.*
Trochatella, *Lesson*, 1830. *Calyp. araucaria*.
Symphopatella, *Lesson*, 1830. ——— ?
Symphopatella, *Brod.* 1834. *Calyp. sordida*.

Fam. PHORIDÆ.

273. *Phorus*, *Montf.* 1810, *D'Orb.* *Xenophora*, *Fischer*, 18 ?
Onustus, sp. *Humph.* 1797, 28. *Xenophoris*, *Philippi*, 1844.
Trochus, sp. *Linn.*, *Lam.* *Trochus b*, *Blainv.* 1825. *Trochus conchyliophorus*.
274. *Onustus*, sp. *Humph.* 1797; *Gray*, 1840; *Swains.* 1840, 353.
Trochus, sp. *Lam.* *Trochus indicus*.
Onustus, sp. *Swains.* *Trochus solaris*.

Fam. TECTURIDÆ.

275. *Tectura*. *Tecture*, *Aud. & Edw. Ann. Sci. Nat.* 1830. *Lottia*, sp. *Forbes.* *Patelloidea*, sp. *Cantraine*, 1835. *Patella parva*.
Lottia, *Gray*, 1833; *Sow.* *Acmaea*, *Eschsch.* 1833; not *Acme*, nor *Acmea*, *Hartm.* *Helcion*, *D'Orb.* 1846; not *Montf.* *Acme Scutum*, *Eschsch.*
Patelloida, *Quoy & Gaim.* 1834; *Desh.* 1836. *Pat. rugosa*, *Quoy*.
Patella **, *Lorèn.* *Lottia*, sp. *Forbes.* *Pat. testudinalis*, *Müller*.
Patelloidea, *Cantraine*, 1835. *Ancylus*, sp. *Costa.* *Ancy. Gussonii*, *Costa*.
276. ? *Scurria*. *Acmea*, sp. *Eschsch.* 1833. *Helcion*, sp. *D'Orb.* 1846.
Patella, sp. *Lesson*, 1830. *Patella Scurra*, *Lesson*.

Cantraine refers *Patella pectinata* (*Helcion*, *Mont.*) to the genus *Patelloidea*, and *D'Orbigny* has more lately considered *Helcion* as synonymous with *Acmea*; but the animal of *Patella pectinata* which I examined in Paris in 1820 had gills on the lower edge of its mantle, and is a true *Patellida*. *Scurria* appears by *D'Orbigny's* description to have the same; do some *Patella*-like animals have gills in both situations?

Fam. DENTALIADÆ.

277. *Dentalium*, *Linn.*; *Lam.* 1801; *Montf.* 1810. *D. elephantinum*.
278. *Entalis*, *Gray*, *Syn.* 1844, 58; not *DeFrance*. *Dentalium e*, *Desh.* 1825.

279. The *Entalis* (*duplicatus*), *Defrance & Blainville*, and the *Dentalium labiatum*, *Turton*, are described from specimens with the tip broken, and with the internal part reproduced.
280. *Gadila. Dentalium*, sp. *Mont.* *Dentalium* §§, *Desh.* *Cresis*, *Rang.* *Gadus*, "*Montag.*"; *Rang*; not *Linn.* *Dent. Gadus*, *Montag.*
281. ? *Artolon*, *Montf.* 1810. *Art. dactylus*, *Montf.*
Dentalium strangulatum, *D. subulatum*, *Desh.*, belongs to *Ditrupe*, *Berkeley*, and is an *Annelide*.

Sect. III. INIOPHTHALMA.

Fam. TRUNCATELLIDÆ.

282. *Truncatella*, *Risso*, 1813, 1826; *Cantraine*, 1835. *Choristoma*, *Christ. & Jans.* 1832. *Cyclostoma*, sp. *Drap.*; *Flem.* *Rissoa*, sp. *Desm.*, *Menke.* *Paludina*, sp. *Payr.* *Turbo*, sp. *Montag.* *Turritella*, sp. *Flem.* *Fidelis*, *Risso.* *Turbo truncatus* and *subtruncatus*, *Montag.* (young shell).

Fam. PYRAMIDELLIDÆ.

283. *Obeliscus*, *Humph.* 1797. *Pyramidella*, *Lam.* 1801. *Pyramidellus*, *Montf.* 1810. *Bulimus*, sp. *Brug.* *Helix*, sp. *Müller.* *Auricula*, sp. *Lam.* 1809. *Trochus dolabratus*.
284. *Pyramidella*, sp. *Lam.* 1822. *Voluta auris-cati*, *Chemn.*
285. *Monotygmata*, *Gray*, in *Sow. Man.* 183; not *Lea.* *Monot. striata*, *Gray*, *Sow.* f. 371.
Auricula, sp. *Lam.* *Auricula acicula*.
 I do not know *Monotygmata melanoides*, *Lea*, 185, from *Calcutta*.
286. *Odostomia*, sp. *Flem.* 1824. *Turbonilla* β *a*, *Lovèn.* *Jaminea*, sp. *Brown*, 1827, 1844; not *Risso*, 1826. *Pyramidella*, *Risso*, 1826; not *Lam.* *Ovatella*, sp. *Bivon*, 1832. *Auricula*, sp. *Lam.*, *Philippi.* *Sabanea*, sp. *Leach*, 1819. *Rissoa*, sp. *Scacchi.* *Voluta*, sp. *Dillw.* *Turbo plicatus*, *Montag.*
Acteon, sp. *J. Lea.* *Turbonilla*, sp. *Risso*, 1826. *Turbo gracilis*, *Brocchi.*
Parthenia, *Lowe*, 1840. *Odostomia*, sp. *Flem.* *Chemnitzia*, sp. *Philippi.* *Turbonella* β *b*, *Lovèn.* *Pyramis*, sp. *Brown.* *Turbo spiralis*, *Montag.*
Jaminea, sp. *Brown*, 1827. *Turbo interstinctus*, *Montag.*
Turbonilla, sp. *Risso*, 1826, f. 63; *Lovèn*, 1846. *Parthenia*, sp. *Lowe.* *Tornatella*, sp. *Michoud*, *Philippi.* *Chemnitzia*, sp. *Philippi.* *Turbonilla Humboldtii.*
 ? *Acteon*, sp. *Lea*, 1833; not *Montf.* 1810. *Acteon elevatus*, *Lea.* *Auriculina.* *Turbonilla a* **, *Lovèn.* *Odostomia obliqua*, *Alder.* *Rissoella.* *Rissoa*, sp. *Brown.* *Rissoa*? *glaber*, *Alder.*
Jaminea, sp. *Adams.* *Jaminea seminuda*, *Adams.*
Jaminea, sp. *Couthouy.* *Jam. exigua*, *Couth.*

287. *Amoura*, *Moller*, 1842. *Amoura candida*.
288. *Turbonilla*, sp. *Risso*, 1826; not *Leach* MSS. *Turbonilla a. Lovèn*, 1846. *Parthenia* (sp.), *Lowe*, 1840. *Pyrgiscus*, *Philippi*, 1841. *Orthostelis*, *Arad. & May*, 1841. *Ebala*, *Leach* MSS. 1819. *Turritella* (sp.), *Leach*, 1819; *Flem.* 1828; *Risso*, 1826; *Totten*. *Chemnitzia*, sp. *Philippi*, 1844. *Melania*, sp. *Philippi*. *Rissoa*, sp. *Scacchi*. *Pyramis*, sp. *T. Brown*. *Turbo elegantissimus*.
Chemnitzia, sp. *D'Orb.* 1836?, 1841. *Chemn. Turris*, *D'Orb*
Ebala. *Turritella*, sp. *Leach*, 1819; *Flem.* 1828. *Turbo nitidissimus*.
Pyramis, *Couthouy*. *Pyr. striatulus*, *Couth*.
Jaminea, sp. *Adams*; not *Risso*. *Turbonilla*, sp. *Lovèn*. *Jaminea producta*.
Eulimella, *Forbes*, 1846. *Eulima*, sp. *Philippi*, 1844. *Melania*, sp. *Scacchi*. *Turbonilla*, sp. *Lovèn*. *Melania Scillæ*.
Menetho, *Moller*, 1842. *Turbo albula*, *Fab*.
- Note*.—*Risso's* genus *Turbonilla* consists of four species, two of this and two of the former genus; but his character best agrees with his first two species. He notices the peculiarity of the nucleus; it is exactly synonymous with *Parthenia*, *Lowe*, *Chemnitzia*, *Philippi*, and *Turbonilla*, *Lovèn*. *D'Orbigny*, *Voy.* 1841, did not know the animal of *Chemnitzia*.
289. *Balcis*, sp. *Leach* MSS. 1819. *Melania*, sp. *Payr*. *Eulima*, sp. *Risso*, 1826; *Philippi*. *Phasianella*, sp. *Flem.* *Helix*, sp. *Brocchi*. *Turbo*, sp. *Renieri & Donovan*. *Helix subulata*.
290. *Eulima*, *Risso*, 1826; *Cantraine*. *Balcis*, sp. *Leach*, 1819. *Parithea*, *J. Lea*, 1833. *Melania*, sp. *Lam.*, *Blainv.* *Melania* *, *Philippi*. *Phasianella*, sp. *Flem.* *Helix*, sp. *Montag.*, *Brocchi*. ? *Polyphemopsis*, *Portlock*. *Helix polita*.
291. *Niso*, *Risso*, 1826; *Philippi* (*Nisso, error*). *Bonellia*, *Desh.* 1838; not *Rolando* nor *Cuvier*. *Janella*, *Gratel.* 1830. *Bulimus*, sp. *Lam.* *Helix*, sp. *Brocchi*. *Turbo terebellum*.
Pasithea, sp. *J. Lea*, 1833. *Pasithea claibornensis*, *Lea*.

Fam. ACTEONIDÆ.

292. *Acteon*, *Montf.* 1810. *Tornatelle*, *Lam.* 1812. *Tornatella*, *Lam.* 1822. *Speo*, *Risso*, 1826. *Auris-mustela*, *Humph.* 1797. *Myosota*, *Humph.* MSS. *Pedipes*, *A. Blainv.* *Bulimus*, sp. *Brug.* *Turbo*, sp. *Da Costa*. *Voluta tornatilis*.
293. *Dactylus*, *Schum.* 1817. *Solidula*, *Fischer*. *Tornatella*, sp. *Lam.* 1822. *Auricula*, sp. *Martini*. *Bulimus*, sp. *Brug.* *Helix*, sp. *Gmelin*. *Voluta*, sp. *Dillw.* *Bulla solidula*.
294. ? *Acteocina*. *Acteon*, sp. *J. Lea*, 1833. *Acteon Wetherellii*, *Lea*.
295. *Cinulia*, *Gray*, 1840; 1844, 62. *Avellana*, *D'Orb.* 1846. *Avellana globulosa*, *D'Orb.*

296. Ringinella, *D'Orb.* 1846. Ring. lacryma, *D'Orb.*
 Globioconcha, *D'Orb.* 1826. Glob. rotundata, *D'Orb.*
297. Acteonella, *D'Orb.* 1846? Act. Renauxiana, *D'Orb.*
 Acteonella, sp. *D'Orb.* Act. lævis, *D'Orb.*

Order III. PLEUROBRANCHIATA.

Fam. I. BULLIDÆ.

DORIDIINA.

298. Doridium, *Meckel*, 1809; *Chiaje*; *Swains.* 1840. Acera, *Cuv.* 1817; *Lam.* 1822. Bulla carnosus, *Cuv.*? Doridium membranaceum.
 Eidothea, *Risso.* Doridium, sp. *Chiaje*, *Meckel.* Acera, sp. *Lam.* Dor. coriaceum.
299. Phylina, *Ascanius*, 1772. "Phylina," *Lam.* Lobaria, *Müller*, 1776; *Gmel.*; *Blainv.* Bullæa, *Lam.* 1801, 1822; *Swains.* 1840. Amydala, *Planc.* Bulla aperta.
300. Cryptophthalmus, *Ehrenb.* 1831. Bulla smaragdina, *Leuck.* Bulla, sp. *Sow.* Bulla viridis, *Sow.*
301. Scaphander, *Montf.* 1810; *Leach*, 1819. Assula, *Schum.* 1817. Charta, *Murlini.* Bullæa, *Roissy.* Bulla lignarius.
 [Gioenia, *Gioeni*, *Brug.*; Tricla, *Retzius*; Char, *Bruguère*; is the gizzard of this species.
302. Alicula, *Ehr.* 1831. Alicula cylindrica.
 Roxania, *Leach MSS.* 1819. Bulla Cranchii.

BULLINA.

303. Akera, *Müller*, 1776, not *Cuvier.* Eucampe, *Leach MSS.* 1819. Vitrella, *Swains.* 1840, 360. Bulla, sp. *Gmel., Lam. &c.* Akera bullata.
304. Bullina, *Risso*, 1826; not *Férussac.* Cylindrella, *Swains.* 1840. Cylichna, *Lovèn*, 1846. Volvaria, *Brown*, 1827 and 1844; not *Lam.* Tornatella, sp. *Kiener.* Bulla cylindrica, *Montag.*
305. Rhizorus, *Montf.* 1810. Rhiz. adelaides, *Montf.* Utriculus, sp. 1827. Utriculus β , *Brown*, 1844. Amphisphyra, *Lovèn*, 1846. Bulla pellucida, *Johnst.* Diaphana, *Brown*, 1837. Diaph. candida, *Brown.*
306. ? Utriculus *a*, *Brown*, 1844. Retusa, sp. *Brown*, 1817. Bulla obtusa, *Montag.*
307. Bulla, *Lam.* 1801; *Schum.* 1817. Bullus, *Montf.* 1810. Vesica, *Swains.* 1840. ? Cymbium (gosson), *Adans.* 1757. Bulla ampulla.
 Haminea, *Leach MSS.* 1819. Bulla hydatis.

308. *Atys*, *Montf.* 1810. *Naucum*, *Schum.* 1817. *Vesica*, sp. *Swains.* 1840: *Bulla naucum.*

AMPLUSTRINA.

309. *Amplustrum*, *Schum.* 1817, 209. *Amplustra*, *Swains.* 1840, 360. *Bullina*, sp. *Férussac*, 1822; not *Risso.* *Bulla amplustre.*
310. *Hydatina*, *Schum.* 1817. *Bullina*, sp. *Féruss.* 1822; not *Risso.* *Bulla Physis.*
311. *Bullinula*, *Beck*; *Swains.* 1840, 360. *Bullæa*, sp. *Quoy & Gaim.* *Bullina*, sp. *Féruss.* 1822, *Bulla*, sp. *Brug., Dillw.* *Bulla undata*, *Brug.* *Bullina*, sp. *Féruss.* *Bulla scabra*, *Chemn.*
312. ? *Sormetus*, *Féruss.* 1822, *Blainv.* 1825. *Bulla*, sp. *Cuv.* *Cymbium* (*Sormet*), *Adans.* 1757, not *Brod.* *Sorm.* *Adansonii*, *F.*
313. *Gasteropteron*, *Meckel*, 1813; *Swains.* 1840, 361. *Gasteroptera*, *Blainv.* 1825. *Opiptera*, *Rafin.* ? *Sarcoptera*, *Rafin.* *Parthenopia*, *Oken*, 1815 (not *Parthenope*, *Scacchi*). *Clio*, *Chiaje*, not *Pallas.* *Gasteroptera Meckelii*, *Blainv.*
314. ? *Atlas*, *Lesueur*, 1810. *Atlas Peronii.*

Fam. II. APLYSIADÆ.

315. *Dolabella*, *Lam.* 1801; *Cuv.* 1817. *Doris*, sp. *Gmelin.* *Aplysia a*, *Rang.* *Operculum callosum*, *Rumph.* *Dolabella callosa*, *Lam.* *Doris verrucosa.*
316. *Dolabrifera.* *Dolabella*, sp. *Cuvier*, 1817; *Féruss.* *Aplysia b*, *Rang.* *Dolabella dolabrifera.*
? *Thallepupus*, *Swains.* 1840, 357. *Th. ornatus*, *Sw.* *Petalifera.* *Aplysia petalifera.*
317. *Aplysia*, *Gmelin*, 1790; *Cuv.* 1817; *Lam.* 1822. *Aplysia C b*, *Rang.* *Laplysia*, *Linn.* ed. 12; *Lam.* 1801; *Bosc.* *Lerneæ*, *Linn.* ed. 5, 6; *Bohadsch.* *Tethys* or *Tethis*, *Linn.* ed. 10. *Lepus marinus*, *Rondel.* *Esmia*, *Leach MSS.* 1819 (young). *Dolabella*, sp. *Lam.* 1822, shell. *Aplysia depilans.* *Dolabella*, *Risso*, 1826; not *Lam.* 1801. *Aplysia*, *Swains.* 1840, 359. *Aplysia C a*, *Rang.* *Aplys. fasciatus.*
318. *Notarchus*, *Cuv.* 1817; *Schum.* 1817; *Blainv.* *Aclesie*, *Rang.* *N. Cuvieri*, *Blainv.* *Bursiris*, *Risso*, 1826. *Notarchus*, sp. *Philippi*, 1846. *Burs. griseus.* *Notarchus ocellatus*, *Rang.*
319. *Bursatella*, *Blainv.*; *Audouin*; *Swains.* 1840, 359. *Notarchus*, *Swains.* 1840, 359; not *Cuv.* *Notarchus*, sp. *Rang.* *B. Savigniana*, *Rang.* *B. Leachii*, *Blainv.* *Aclesie*, sp. *Rang.* *Aclesie Pleii.*

ICARINA.

320. ? *Icarus*, *Forbes*, 1843. *Icarus Gravesii*.

LEPHOCERCINA.

321. *Lephocercus*, *Krohn*, 1847. *Lepho. Sieboldii*.
 322. *Lobiger*, *Krohn*, 1847. *Lobiger Philippi*.

Fam. III. PLEUROBRANCHIDÆ.

UMBRELLINA.

323. *Umbella*, *Chemn.* 1780. *Acardo*, *Lam.* 1801; *Megerle*, 1811. *L'ombrelle*, *Lam.* 1812; *Férussac*. *Umbrella*, *Lam.* 1822. *Umbra-
 culum*, *Schum.* 1817. *Gastroplax*, *Blainv.* *Ombrella*, *Blainv.*
Patella, sp. *Humph.*, *Linn.* *Patella umbellata*.

N.B. *Acardo crustularius*, *Lam.* 1801, *E. M.* 173. f. 1, 2, is part of the vertebra of a whale: this bone has also been described as *Alcyonium paniceum*, *Lam. Hist.* ii. 400. n. 31.

TYLODINANA.

324. *Tylodina*, *Rafinesq.*; *Blainv.* 1825; *Philippi*, 1836, *Joannis*.
Tylod. punctata.

PLEUROBRANCHIANA.

325. *Pleurobranchus*, *Cuvier*. Pl. *Peronii*.
Lamellaria b, sp. *Montag.* *Oscanus*, *Leach MSS.* 1819. *Pleuro-
 branchus*, *Flem.* *Bulla membranacea*, *Montag.*
Discoides, *Renieri*.
 326. *Berthella*, *Blainv.* 1825. *Cleanthus*, *Leach MSS.* 1819. *La-
 mellaria b*, sp. *Montag.* *Pleurobranchus*, sp. *Flem.* " *Laminaria*,
Gray," *Desh.* *Bulla plumula*.
Pleurobranchus, sp. *Cuv.* Pl. *luniceps*.
 327. *Pleurobranchæa*, *Leve*, 1813; *Cuv.* 1817. *Pleurobranchus*,
Oken, 1815. *Cyanogaster*, *Rudolphi*. *Pleurobranchæna*, *Swains.*
 1830, 361. *Pleurobranchidium*, *Blainv.* 1825; *Verany*. *Pleur.*
Meckelii.
 328. *Posteobbranchus*, *D'Orb.* 1837. *Posteriobbranchus*, *Gray*. *Post.*
maculatus.
 329. ? *Westernia*, *Quoy & Gaim.*; *Rang*, 1829.
 330. ? *Gervisia*, *Quoy & Gaim.*; *Rang*, 1829.

Fam. IV. PTEROTRACHEIDÆ.

331. *Anops*, *D'Orb.* 1835. *Anops Peronii*.
 332. *Pterotrachea*, *Forsk.* 1775; *Brug.*, *Cuvier*. *Pterot. coronata*.
Firola, *Peron & Lesueur*, 1810; *Rang*, *D'Orb.* *Fir. Quoyiana*.
 ? *Hyptere*, *Rafinesque*.
Firoloide, *Lesueur*. *Fir. Desmarestiana*.

333. Cerophora, *D'Orb.* 1835. Cerop. Lesueurii.
 334. Cardiapoda, *D'Orb.* 1835. Card. pedunculata.
 335. Carinaria, *Lam.* 1801; *D'Orb.* Carinarius, *Montf.* 1810. Pterotrachea, sp. *Cuv.* Car. vitrea.
 336. Argonauta, *Linn., Lam.* 1801. Arg. sulcata.
 337. Bellerophon, *Montf.* 1810.
 338. Bellerophorina, *D'Orb.*; not *Forbes.*

Fam. V. SAGITADÆ.

339. Sagita, *Quoy & Gaim.* 1829?
 Sagita triptera, *D'Orb.*
 Sagita diptera, *D'Orb.*
 Sagita exaptera, *D'Orb.*
 340. Sagitella, *Lesueur.* Pterotrachæa c, *Blainv.* 1825. Sagit. æquipinnis.

Order IV. GYMNOBRANCHIATA.

Fam. I. DORIDÆ.

DORIDINA.

341. Glossodoris, *Ehrenb.* 1831. Glos. xantholeuca.
 Doris-digitata, *D'Orb.* 1838? Dor. verrucosa.
 342. Actindoris, *Ehrenb.* 1831. Act. sponsa.
 343. Pterodoris, *Ehrenb.* 1831. Pter. picturata.
 344. Doris, *Linn.; Lam.* 1801. Doris Argo.
 Dendoris, *Ehrenb.* 1831. Den. lugubris.
 345. Brachychlanis, *Ehrenb.* 1831 (*Brachychlamys, misprint*). Bra. pantherina.
 Doris-prismatica, *D'Orb.* 1838. D. atromarginata.
 Goniodoris, *Forbes*, 1840. Doris nodosa.
 Doris β . prismatica, *Cuv.* 1817. Dor. cera.
 346. Actinocyclus, *Ehrenb.* 1831. Act. verrucosus.
 347. Asteronotus, *Ehrenb.* 1831. Ast. Hemprichii.
 348. Hexabranhus, *Ehrenb.* 1831. Hex. prætextus.
 Doris, sp. *Cuv.* Dor. laciniata.
 Doris **, *Alder & Hancock.* D. muricata.
 349. Onchidoris, *Blainv.* 1816. Onchidiorus, *Férus.* Onchidora, *Cuv., D'Orb.* Onchidiodoris, *Agass.* 1847. O. Leachii.
 ? Peronia, *Lesson*, not *Blainv.* P. —?
 ? Plocamophorus, *Leuck.* P. —?
 350. Villiersia, *D'Orb.* 1837. Vill. seutigera.
 351. ? Hypobranchiæa, *Adams*, 1847. H. fusca.

TRIOPINÆ.

352. *Triopa*, *Johnst.* 1838; *Alder & Hanc.* 1845. *Liopa*, *Gray*, 1840 (*misprint*). *Themisto*, sp. *Oken*, 1815. *Tritonia*, *Lam.* 1810; not *Cuvier*, 1787. *Psiloceros*, *Menke*. *Cladophora*, *Gray*, 1840. *Euplocamus*, sp. *Philippi*, *Thompson*. *Dor. clavigera*.

POLICERINA.

353. *Aegires*, *Lovèn*, 1846; *Alder & Hanc.* 1845. *Polycera*, sp. *D'Orb.* 1837. *Pol. punctilucens*.
354. *Thecacera*, *Flem.* 1828; *Alder & Hanc.* 1845. *Doris pennigera*.
355. *Polycera*, *Cuv.* 1817; *Risso*, 1826; *Alder & Hanc.* *Themisto*, sp. *Oken*, 1815. *Doris quadrilineata*.
Triopa, sp. *Johnst.* *Triopa Nothus*.
356. *Idalia*, *Leuck.* 1828. *Doris*, sp. *Mont.* *Okenia*, *Brown*. *Idalia elegans*.
Euplocamus, *Philippi*, 1836. *Idalia*, sp. *Philippi*, 1844. *Euplocamus croceus*.
Doris, sp. *Cantraine*. *Eup. ramosus*.
357. *Ancula*, *Lovèn*, 1846. *Idalia*, sp. *Alder & Hanc.* *Polycera*, sp. *Alder*. *Polyc. cristata*.
358. *Dimorpha*, *M. Edw.* 1837; *Gray*, 1840.
359. *Plocamoceros*, *Leuck.*, *Rüppell*. "Placamoceros," *D'Orb.* *Ploc. ocellatus*.
360. *Peplidea*, *Lowe*, 1842. *Pepl. Maderæ*.

JANINA.

361. *Janus*, *Verany* (1844), 1846. *J. spinolæ*, t. 1. f. 9.

Fam. II. TRITONIADÆ.

TRITONIANA.

362. *Tritonia*, *Cuv.* 1785, 1817, not *Lamk.* *Sphærostoma*, *Macgilliv.* *T. Hombergii*.
363. ? *Duvaucelia*, *Leach*; *Risso*, 1826. *D. gracilis*.

MELIBÆINA.

364. *Dendronotus*, *Alder & Hanc.* 1844. *Amphitrite*, *Ascan.* *Tritonia*, sp. *Sars*, *Thomp.*, &c. *Doris*, sp. *Müller*. *Doris arborescens*.
365. *Doto*, *Oken*, 1815 (*Dota*, *Gray*, *error of press*). *Tritonia*, sp. *Cuvier*. *Melibæa*, sp. *Johnst.* *Tergipes*, sp. *D'Orb.* *Doris maculata*.
Melibæa, sp. *Johnst.* *Doris fragilis*, *Forbes*.

366. *Lomanotus*, *Verany*, 1846. *Lom. Genei*.
 367. *Melibe*, *Rang*, 1829. *Melibæa*, *Forbes*, 1838. *Melibe*, sp. *Johnst.* *Meliboea*, *Herrm.* *Malybe*, *Gray* (error of press), 1840. *Melibe* — ?
 368. *Scyllæa*, *Linn.* *S. pelagica*.
 369. *Nerea*, *Lesson*, 1830. *Nerea punctata*.
 370. *Tethys* or *Tethis*, *Linn.* *Tethis*, *Lam.* 1801. *Fimbria*, *Bohadsch*, 1761; not *Megerle*. *Tethys fimbriata*.

EOLIDINA.

371. *Glaucus*, *Forster*, 1800; *Cuv.*; *Lam.* 1812; not *Poli*, 1795. *Scyllea*, sp. *Bosc.* *Doris*, sp. *Gmelin.* *Doris radiata*.
 372. *Laniogerus*, *Blainv.* 1825. *Glaucus* in a bad state? *Lan. Elfortii*.
 373. *Eolidia*, *Cuv.* 1797; *Lam.* 1812. *Æolis*, *Oken*, 1815; *Lovèn*, 1846. *Limax*, sp. *Linn.* *Doris*, sp. *Müller.* *Eolis*, sp. *Alder & Hanc.* *Æolidia*, *Herrm.* 1846. *Doris papillosa*.
Æolidia, *Ehrenb.* 1831. *Æol. habessinica*.
Montagua, *Flem.* 1824. *Eubbranchus*, *Forbes.* *Doris*, sp. *Mont.* *Doris cærulea*.
Ethalion, *Risso*, 1826. *Eolidia*, sp. *Otto.* *Eol. hystrix*.
 ? *Eolidina*, *Quatrefages*, 1843. *Eol.* — ?
 374. *Calliopæa*, *D'Orb.* 1837; *Verany.* *Call. bellula*.
 375. *Cavolina*, *Brug.* 1792; *Cuv.* 1817; not *Abild.* *Eolis c*, *Alder.* *Eolidia*, sp. *Cuv.* *Doris peregrina*.
Montagua, sp. *Flem.* 1824. *Doris longicornis*.
Eolidia, sp. *Chamisso.* *Eol. annulicornis*.
 376. *Flabellina*, *Cuv.* 1830. *Flabellines*, *Cuv.* 1817. *Eolis b*, *Alder.* *Doris affinis*.
 377. *Tergipes*, *Cuvier*, 1817; *Lovèn*, 1846. *Eolis d*, *Alder.* *Limax*, sp. *Forsk.* *Doris*, sp. *Gmel.* *Æolis*, sp. *Johnst.* *Tegipes*, *Ald. & Hanc.* (error of press). *Doris lacinulata*.
Doris, sp. *Mont.* *Doris maculata*.
 378. *Hermæa*, *Lovèn*, 1846. *Doris*, sp. *Mont.* *Doris bifida*.
 379. *Clælia*, *Lovèn*, 1846. *Doris*, sp. *Vahl.* *Doris fimbriata*.
Tritonia, sp. *Forsk.* *Trit. velata*.
 380. *Alderia*, *Allman*, 1844; *Alder & Hanc.* 1844; *Lovèn.* *Stilifer*, *Lovèn*; not *Ehrenb.* *Stilifer modesta*.
 381. *Pterochilus*, *Alder & Hanc.* 1844. *Pteroc. pulcher*.
 382. *Proctonotus*, *Alder & Hanc.* 1844. *Proct. mucroniferus*.
 383. *Stilifer*, *Ehrenb.* 1831, not *Flem.* *Stiliger*, *Gray*, 1840 (error). *Stilifer ornatus*.

384. *Phyllodesmium*, *Ehrenb.* 1831. *Phyl. hyalinum*.
 385. ? *Eumenis*, *Alder & Hanc.* 1845. *Eum. marmorata*.
 386. ? *Dermatobranchus*, *Hasselt*, 1824 ; *Blainv.* 1825. *D. striatus*.

Fam. III. PLACOBANCHIDÆ.

387. *Placobranchus*, *Hasselt*, 1824 ; *Blainv.* 1825 ; *Rang.* *Plac. ocellatus*.
 388. *Elysia*, *Risso*, 1812, 1826 ; *Blainv.* 1825 ; *Philippi*, 1844. *E. timida*, *Risso*.
Acteon, *Oken*, 1815. *Actæon*, *Rang* ; not *Montf.* 1810. *Aplysiop-terus*, *Chiaje*. *Rhycobranchus*, *Cantraine MSS.* 1827. *Placobranchus*, sp. *Lovèn*. *Planaria*, sp. *Flem.* *Aplysia*, sp. *Montag.* *Aplysia* C, *Blainv.* *Elysia*, sp. *Philippi*, *Verany*. *Aplysia viridis*, *Montag.*
 389. ? *Fucola*, *Quoy & Gaim.* 1832. *Fucicola*, *Menke*, 184 ? ; *Herrm.* *Fucola* — ?

Fam. IV. LIMAPONTIADÆ.

390. *Limapontia*, *Johnst.* 182 ? ; *Alder & Hanc.* 1846. *Pelta*, sp. *Quatrefages*, 1844. *Planaria*, sp. *Müller.* *Lim. nigra*.
Pelta, *Quatrefages*, 1844 ; not *Beck*, 1837. *P. coronata*.
 391. ? *Chalidis*, *Quatrefages*, 1844. *Ch. cærulea*.
Chalidis, *Ald. & Hanc.* *Ch. nigricans*.
 392. *Ictis*, *Alder & Hanc.* 1847. *Ictis Cocksii*.
 393. ? *Acteonia*, *Quatrefages*, 1844. *Act. senestra*.
Acteonia, *Alder & Hanc.* 1847. *A. corrugata*.
 394. *Zephrina*, *Quatrefages*, 1844. *Z. pilosa*.
Venilia, *Alder & Hanc.* 1847. *V.* — ?
Proctonotus, *Alder & Hanc.* 1847. *P. splendidulus*.
 395. *Amphorina*, *Quatrefages*, 1844. *Am. Aberti*.

Fam. V. PHYLLIRRHOIDÆ.

396. *Phyllirrhoë*, *Peron* ; *Esch. (Isis)* 1825 ; *Philippi.* *Phylliroë*, *Cuvier*, 1817 ; *Risso*, *Blainville.* *Ph. bucephala*.
Eurydice, *Esch. (Isis)* 1825. *E. Lichtensteinii*.
 397. ? *Appendicularia*, *Esch. (Isis)* 1825. *A.* — ?
Tomopteris, *Esch. (Isis)* 1825 ; *Tomopteris*, *Menke*, 1844 ; *Briaræa*, *Quoy & Gaim.*, 1829 ; *Briarea*, *Herrm.* 1846 ; *Briareus*, *Good-sir*, 1845, is a crustaceous animal (*Ann. & Mag. N. H.* 1845).

Fam. VI. PHYLLIDIADÆ.

398. Phyllidia, *Cuvier*; *Lam.* 1801; *Blainv.* 1825. Ph. varicosa.
Phyllidea, *Swains.* 1840. Ph. pustulosa.
399. Diphyllidia, *Cuvier*, 1817; *D'Orb.* Linguella, *Blainv.* Diph.
Brugmansii.
Pleurophyllidia, *Meckel.* Diph. lineata.
400. ? Buchananiana, *Lesson*, 1830. Buch. onchidioides.
401. ? Arminia, *Rafin.*; *Blainv.* 1825.

Fam. VII. PATELLIDÆ.

402. Patella, *Linn.*; *Lam.* 1801. P. testudinaria.
Patellus, *Montf.* 1810. P. roseus.
Patella β , *Schum.* 1817. P. granularis.
Patella γ , *Schum.* 1817. P. barbara.
Patella, *Swains.* 1846. P. miniata.
Lepas, sp. *Adanson.* P. libot.
Lottia, sp. *Gray*, fide *D'Orb.* Pat. zebrina.
? Goniclis, *Rafinesque.* ——— ?
403. Nacella, *Schum.* 1817. N. mytiloides.
Fatina, *Leach MSS.* 1819. Patella α , *Lovèn.* P. cærulea.
404. Helcion, *Montf.* 1810, not *D'Orb.* 1846. Patelloidea, sp. *Cantaine.* P. pectinatus.
405. Scutellina. Scutella, sp. *Brod.* 1834, not *Lam.* Scut. crenulata.
406. Lepeta, *Gray*, 1844. Patella γ , *Lovèn.* P. cæca.

Fam. VIII. CHITONIDÆ.

407. Lophurus and Lophuriderma, *Poli*, 1795. Lepidopleurus, sp.
Leach MSS.; *Risso*, 1826. Chiton * & * *, *Gray*, 1847. Chiton, sp. *Lam.* 1822. Chiton A, sp. *Blainv.* Ch. siculus.
Chiton, *Guild.* 1835. Ch. squamosus.
408. Radsia, *Gray, Proc. Zool. Soc.* 1847. Chiton *, sp. *Gray*, 1847.
Ch. Barnesii.
409. Callochiton, *Gray*, 1847. Chiton, sp. *Montag.* Ch. lævis.
410. Ischnochiton, *Gray*, 1847. Chiton textile.
411. Leptochiton, *Gray*, 1847. Ch. cinereus.
Lepidopleurus, sp. *Risso*, 1826. Ch. Cajetanus.
412. Tonicia, *Gray*, 1847. Chit. elegans.
Tonicia * *, *Gray*, 1847. Ch. disjunctus.
413. Acanthopleura, *Guild.* 1835; *Gray*, 1847. Canthapleura, *Swains.* 1840. Ch. spinosa.

414. Chiton, *Linn.*; *Lam.* 1801; not *Guild.* Acanthopleura, sp. *Gray*, 1847. Ch. gigas.
415. Schizochiton, *Gray*, 1847. Ch. incisus.
416. Corephium, *Browne?*, 1756; *Gray*, 1847. Ch. echinatus.
417. Plaxiphora, *Gray*, 1847. Ch. Carmichaelis.
418. Onythochiton, *Gray*, 1847. Ch. undulatus.
419. Enoplochiton, *Gray*, 1847. Ch. niger.
420. Mopalia, *Gray*, 1847. Ch. Hindsii.
421. Katharina, *Gray*, 1847. Ch. tunicatus.
422. Cryptochiton, *Gray*, 1847. Ch. amiculatus.
423. Cryptoconchus, "*Blainv.*," *Swains.* 1840. Ch. porosus.
424. Amicula, *Gray*, 1842. Ch. vestitus.
425. Acanthochetes, *Leach*, 1819; *Gray*, 1842, 1847. Acanthochites, "*Leach*," *Risso*, 1826. Phakellopleura, *Guild.* 1835; *Swains.* 1840. Acanthochiton, *Herrm.* 1846. Ch. fascicularis. Chitonellus, sp. *Guild.* 1835. Ch. latus.
426. Chitonellus, *Lam.* 1822; *Gray*, 1847. Chitonella, *Desh.* Cryptoconchus, "*Blainv.*," *Burrows.* Cryptoplax, *Burrows.* Chitoniscus, *Herrm.* 1846. Ch. lævis.
427. Gryphochiton, *Gray*, 1847. Ch. nervicanus.
428. ? Metopoma, *Phillips*, 1844. M. imbricata.

Order V. PULMOBRANCHIATA.

Fam. I. ARIONIDÆ.

429. Arion, *Férus.* 1817. Limacia, *Hartm.* 1821. Shell: Limacella, *Brard.* Limacellus, *Turton.* Limax ater. Limacellus, *Blainv.*, not *Brard.* L. Elfortiana.
430. Phosphorax, *Webb*, 183 ? P. — ?
431. Helicarion, *Férussac*, 1821. Helicolimax β , *Blainv.* Helixarion, *Féruss.* 1819. Vitrina, sp. *Sow.*, *Gray*, &c. Helix Cuvieri.
432. Platycloster, *Hasselt*, 1824. Helicopsis?, sp. *Beck.* 1837. P. corneus.
433. Stenopus, *Guild.* 1828, *Beck.* St. cruentatus. Ariophanta, *Desmoulin*, 1829. Nanina, sp. *Gray*, *Beck.* Helix lævipēs. Nanina, *Gray*, 1834, not *Risso.* Zonites, *Swains.* 1840, not *Montf.* Vitrina, sp. *Quoy & Gaim.* Hel. citrina. Macrochlamys, *Benson*, 1832. Tanychlamys, *Benson*, 1834. Nanina, sp. *Benson*, 1834. Helicella, sp. *Beck.* H. vitrinoides.

- ? *Helicopsis*, *Beck*. *Hel. glandula*.
 ? *Microcystis*, *Beck*. ? *Helicolimax*, sp. *Férus*. *M. pellicula*.
Helicogena, sp. *Férus*. *Hel. ligulata*.
 ? *Solarium*, sp. *Spix*. *Helicella*, sp. *Beck*. *Sol. imperforatum*.

Fam. II. HELICIDÆ.

PHILOMYCINA.

434. *Philomycus*, *Rafinesque*; *Férus*. 1829. *Tebenophorus*, *Binnycy*, 1843. *Helix*, sp. *Bosc*. *Limax* C, *Blainv*. 1825. *Helix carolinensis*.
 435. *Meghimatium*, *Hasselt*, 1824. *M. striatum*.
Scutelligera, *Spix*, 1824, (*Isis*) 1825, 588 (*S. amerlandia*), and *Parmula*, *Heyden*, (*Isis*) 1823, 1247. t. 18. 1825, 588 (*P. cocciformis*), is the larva of *Microdon mutabilis*, a dipterous insect.

LIMACINA.

436. *Limax*, *Linn.*; *Lam*. 1801. Shell: *Limacella*, *Brard*. *Limacellus*, *Turton*. *L. rufus*.
Parmacella, sp. *Philippi*. *P. nigricans*.
 437. *Geomalacus*, *Allman*, 1846. *G. maculatus*.
 438. ? *Oris*, *Risso*, 1826. *O. Ferussaci*.

TESTACELLINA.

439. *Plectrophorus*, *Bosc*, 1801; *Férussac*, 1819.
 440. *Testacella*, *Lam*. 1801; *Blainv*. 1825. *Testacellus*, *Montf*. 1810; *Féruss*. *T. haliotoideus*.

VITRININA.

441. *Parmacella*, *Cuvier*, 17 ?; *Montf*. 1810; *Lam*. 1812. *Parmacellus*, *Féruss*. *P. Olivieri*.
 442. *Cryptella*, *Webb*, 1833. *Testacellus*, sp. *Féruss*. *Parmacella*, sp. *Sow*. *C. ambigua*.
 443. ? *Pectella*, —.
 444. *Vitrina*, *Drap*. *Vitrine*, *Lam*. 1812. *Vitrinus*, *Montf*. 1810. *Helicolimax*, *Férussac*. *Limacina*, *Hartmann*, 1821. *Hyalina*, *Studer*. *Cobresia*, *Hübner*. *V. pellucida*.
Semilimax, *Férus*. 17 ? *Testacella*, sp. *Oken*. *Hyalina*, *Studer*. *Limacina*, *Hartm*. 1821. *V. elongata*.
 445. *Helicolimax*, *Férus*. 1819; *Blainv*. 1825. *Daudebardia*, *Hartm*. 1821. *H. rufa*.
 446. *Omalonyx*, *D'Orb*. 1836. *Cochlohydra*, sp. *Férus*. *Homalonyx*, *Agassiz*. *Amphibulima*, sp. *Beck*. *Helix unguis*.

447. *Amphibulima*, sp. *Beck*. *Amphibulima*, *Lam.* 1812. *Amphibulinus*, *Montf.* 1810. *Bulimus*, sp. *Brug.* *A. cucullata*.
448. *Helisiga*, *Lesson*, 1829. *Amphibulina*, sp. *Blainv.* *H.* —.
449. *Succinea*, *Drap.* 1804; *Risso*, 1826. *Cochlohydra*, sp. *Férus.* *Tapada*, *Studer.* *Lucina*, *Oken*, 1819. *Amphibulina*, *Hartm.* 1821. *Limnea*, sp. *Flem.* *Bulimus*, sp. *Brug.* *Amphibina*, *Hartm.* *Helix putris*.
450. *Simulopsis*, *Beck*, 1837. *Cochlohydra*, sp. *Férus.* *Helix sulcosa*.
451. *Pelta*, *Beck*, 1837, not *Quatrefages*. *P. Cumingii*.

HELICINA.

452. *Helix*, *Linn.*, *Brug.*, *Lam.* 1801. *Pomatia*, *Beck*, 1837; *Gray*, 1840. *Helicogena*, sp. *Férus.*; *Risso*, 1826. *Cænatoria*, sp. *Held.* 1837. *Helix Pomatia*.
Cantareus, *Risso*, 1826. *Lucena*, *Hartm.* 1821. *Tapada*, *Gray*, 1840. *Pomatia*, *Gesner*. *Cænatoria*, sp. *Held.* 1837. *Hel. naticoides*.
453. *Acavus*, *Montf.* 1810; *Beck*, 1837. *Otala*, *Schum.* 1817. *Helicogena*, sp. *Férus.* *Helix hæmastoma*.
Helicogena, sp. *Risso*, 1826; *Beck*. *Tachea*, sp. *Leach MSS.* 1819. *Cepæa*, *Held.* 1837. *Helix nemoralis*.
Otala, sp. *Schum.* 1817. *Helix lactea*.
Helix, *Risso*, 1826. *Cænatoria*, sp. *Held.* 1837. *Pomatia*, sp. *Beck*. *Tachea*, sp. *Gray*,—*Monstrosity*. *Cornucopia*, *Born*, *Shaw*. *Serpula*, sp. *Gmelin*. *Helix adspersa*.
454. *Arianta*, *Leach MSS.* 1819; *Beck*, 1837; *Gray*, 1840. *Helicogena*, sp. *Férus.* *Cingulifera*, *Held.* 1837. *Helix arbustorum*.
Galaxias, *Beck*, 1837, not *Cuv.* 1817. *Helicogena*, sp. *Férus.* *Helix lucana*.
Dorcasia, *Gray*. *D. Alexanderi*.
Polymita, *Beck*, 1837. *Helicogena* & *Helicella*, sp. *Férus.* *Helix picta*.
Hemitrochus, *Swains.* 1840. ? *Polymita*, sp. *Beck*. *Hem. hæmastoma*.
Cochlea, *Adans.* 1757. *Otala*, *Beck*, 1837; not *Schum.* 1817. *Helicogena*, sp. *Férus.* *Helix pouchet*.
Hemicycla, *Swains.* 1840. *Otala*, sp. *Beck*. *H. plicatula*.
Helicostyla, *Beck*, 1837. *Helicostyla*, sp. *Férus.* *Helix Galactites*.
Eurycratera, *Beck*, 1837. *Leiostoma*, sp. *Swains.* *Helicogena*, sp. *Férus.* *H. jamaicensis*.
Helicophanta, sp. *Gray*. *Eurycratera*, sp. *Beck*. *H. Falconeri*.
Carocolla, sp. *Lam.*, *Schum.* *Discodoma*, *Swains.* *Eurycratera*, sp. *Beck*. *Car. cingulata*.
Helicogena, sp. *Férus.* *Eurycratera*, sp. *Beck*. *H. acutangula*.
455. *Stylodon*, *Christ. & Jans.*; *Beck*, 1837. *Helicostyla*, sp. *Férus.* *Helix unidentata*.

- Helicophanta*, *Beck*. *Helicophanta* β , *Férus*. *Leiostoma*, sp. *Swains*. *Helix Cornu-gigantea*.
Geotrochus, *Van Hasselt*, 1824. *Geo. obtusus*.
Geotrochus, *Swains*. 1840. *Geotrochus*, sp. *Beck*. *Trochus*, sp. *Chemn*. *Helicogena*, sp. *Férus*. *Helix pileus*.
Helicina, *Spix*, not *Lam*. *Geotrochus*, sp. *Beck*. *Trochus*, sp. *Burrows*. *Helicogena*, sp. *Férus*. *Carocolla*, sp. *Gray*, *Menke*. *Troch. bifasciatus*.
Solarium, (sp.) *Spix*, not *Lamk*. *Artemon*, sp. *Beck*. *Sol. candidum*.
Dentellaria, *Schum*. 1817; *Beck*, 1837. *Helix fuliginea*.
Lucidula, *Swains*. 1840. *Dentellaria*, sp. *Beck*. *Helix barbadensis*.
Lucernella, *Swains*. 1840. *Dentellaria*, sp. *Beck*. *Helix hippocastanum*.
Thelidomus, *Swains*. 1840. *Dentellaria*, sp. ? *Beck*. *Helix aspera*.
456. *Vallonia*, *Risso*, 1826. *Amplexus*, *Brown*, 1827. *Lucena*, *Hartm*. 1821. *Circinaria*, *Beck*, 1837. *Zurama*, *Leach MSS*. 1819. *Corneola*, sp. *Held*. 1837. *Helix pulchella*.
Mesomphyx, *Rafinesque*. *Circinaria*, sp. *Beck*. *Helix concava*.
Macrocyclis, *Beck*, 1837. *Helicella*, sp. *Férus*. *H. peruviana*.
Campylæa, *Beck*, 1837. *Helix hispana*.
Chilostoma, *Fitz*. *Campylæa*, sp. *Beck*. *Helix foetens*.
Corneola, sp. *Held*. 1837. *Helicogona*, sp. *Risso*. *Helix cornea*.
Solarium, *Spix*. *Helicella*, *Swains*. 1840. *Helicella*, sp. *Férus*.
Solaropsis, *Beck*, 1837. *Helix pellis serpentis*.
457. *Iberus*, *Montf*. 1810. *Carocolla*, sp. *Lam*. *Helicogena*, sp. *Férus*. *Helix Gaulteriana*.
Chilotrema, *Leach*, 1819; *Gray*, *Beck*. *Latomus*, *Fitz*. *Carocolla*, sp. *Lamk*. *Helicogona*, *Risso*. *Helicogena*, sp. *Férus*.
Lenticula, *Held*. 1837. *Helix lapicida*.
Carocollina, *Ehrenb.*; *Beck*, 1837. *Carocolla*, sp. *Menke*. *Helix barbata*.
Trigonostoma, *Fitz*, *Gray*. *Helicodonta*, sp. *Férus.*, *Risso*. *Vortex*, *Beck*. *Gonostoma*, *Held*. 1837. *Helix obvoluta*.
Drepanostoma, *Porro*. *Chloritis*, sp. *Beck*. *Helix Drepanostoma*.
Chloritis, *Beck*. *Helix unguina*.
Planospira, *Beck*, 1837. *Lomastoma*, *Férus*. *Pusiodon*, sp. *Swains*. 1840. *H. zonaria*.
Obba, *Beck*, 1837. *Helicella*, sp. *Férus*. *H. planulata*.
Obba, sp. *Beck*, 1837. *Helicogena*, sp. *Férus*. *Trochus*, sp. *Chemn*. *H. papilla*.
Ampelita, *Férus*. *H. labrella*.
Discosoma, sp. *Swains*. 1840. *Carocolla*, sp. *Gray*, *Lesson*; *Beck*, 1837. *H. marginata*.
Carocollus, *Montf*. 1810. *Carocollus*, *Lamk*. 1812. *Helix Carocolla*.
Carocolla, *Schum*. 1817. *Helix Lampas*.
Polydontes, *Montf*. 1810. *Helicodontes*, sp. *Férus*. *H. imperator*.

458. *Lampadion*, *Bolten*, 1798. *Lucerna*, sp. *Humph.* 1797. *Labyrinthus*, *Beck*, 1837. *Lyrostoma*, *Swains.* 1842. *Helicodonta*, sp. *Férus.* *Helix otis.*
Caprinus, *Montf.* 1810. *Pleurodonta*, *Fischer*; *Beck*, 1837. *Carocolla*, sp. *Lam.* *Lucerna*, sp. *Swains.* *Helix lynuchus.*
Cepolis, *Montf.* 1810. *Pleurodonta*, sp. *Beck.* *Helix Cepa.*
459. *Tomogerus*, *Montf.* 1810. *Anostoma*, *Fischer*, *Lamk.* *Angystoma*, *Schum.* 1817. *Anastomus*, *Swains.* 1840. *Hel. ringens.*
Tomigerus, *Spix.* *Helix clausa.*
Ringicella, *Gray.* *Anastomus*, sp. *Lam.* *Anas globulosa.*
460. *Polygyra*, *Say*, 1817; *Swains.* 1840. *Helicodonta*, sp. *Férus.*
Dædalochila, *Beck*, 1837. *P. auriculata.*
Petasia, *Beck*, 1837. *Polita*, sp. *Held.* 1837. *Trochus*, sp. *Da Costa.* *Helix trochiformis.*
Conulus, *Fitz.* *Petasia*, sp. *Beck.* *Trochiscus*, *Held.* 1837; not *Sow.* *Helix fulva.*
Tridonta. *Tridopsis*, sp. *Beck.* *Helix plicata.*
Tridopsis, *Rafin.* *Helix lunula.*
Isognomostoma, *Fitz.* *Tridopsis*, sp. *Rafin.*, *Beck.* *Isognostoma*, *Hartm.* 1840. *Isognomonostoma*, *Herrm.* 1846. *Helix personata.*
Stenotrema, *Rafin.* *Tridopsis*, sp. *Beck.* *Helix convexa.*
Mesodon, *Rafin.* *Tridopsis*, sp. *Beck.* *Helix elevata.*
Polygyra, sp. *Say*, *Beck.* *Helix septemvalva.*
Polygyratia. *Polygyra*, sp.? *Beck.* *Hel. Polygyrata.*
461. *Theba*, *Leach MSS.* 1817; *Risso*, 1827; *Beck*, 1837.
Trochidea, *Brown*, 1827. *Trochus*, sp. *Da Costa.* *Turricula*, *Beck*, 1837. *Carocolla*, sp. *Lamk.* *Helicomanes* β , sp. *Férus.* *Helix elegans.*
Theba, *Risso*, 1827. *Helicomanes* α , sp. *Férus.* *Xerophila*, sp. *Held.* 1837. *Helix pisana.*
Cochlicella, sp. *Férus.* *H. conoidea.*
Helicopsis, *Fitz.* 1835; not *Beck.* *H. striata.*
Oxycheilus, *Fitz.* *H. ericetorum.*
Leucochroa, *Beck*, 1837. *Carocolla*, sp. *Lamk.* *H. albella.*
Delphinula, *Bowd.* *H. Delphinula.*
Helicogena, sp. *Férus.* *H. candidissima.*
Ochthephila, *Beck*, 1837. *Geometra*, *Swains.* 1840. *H. bicarinata.*
Bradybæna, *Beck*, 1837. *H. similaris.*
Hygromia, *Risso*, 1826. *Fruticola*, *Held.* 1837. *Bradybæna*, sp. *Beck.* *H. cinctella.*
Monacha, *Fitz.* *Theba*, sp. *Risso.* *Bradybæna*, sp. *Beck.* *Hel. carthusiana.*
Trochulus, *Christ.* *Hel. hispida.*
Heterostoma, *Hartm.* 1844. *Ochthephila*, sp. *Beck.* *Hel. pauperula.*
462. *Helicella*. *Helicelle*, *Lam.* 1812.
Helicella, *Beck*, 1837. *Helicelle*, *Lam.* 1812. *Helicella*, sp. *Risso*,

1826. *Oxycheilus*, *Fitz.* *Helicella* (hyalina), *Férus.* *Zonites*, sp. *Leach*, *Gray.* *Hyalina*, *Férus.*; *Gray*, 1840. *Polita*, *Held.* 1837. *Hel. cellaria.*
- Vitrea*, *Fitz.* *Helicella*, sp. *Beck.* *H.* — ?
- Mesomphix*, *Rafin.*, *Beck.* *Zonites*, sp. *Gray.* *M. lævigata.*
- Mesomphix*, sp. *Beck.* *Helix Olivetorum.*
- Zonites*, *Montf.* 1810; *Beck*, 1837. *Helicella* (verticilli), *Férus.*
- Helicella*, sp. *Risso.* *Tragomma*, *Held.* 1837. *Helix Algira.*
- Ægopis*, *Fitz.* *Zonites*, sp. *Beck.* *Hel. verticillus.*
- Eyromphala*, *Beck*, 1837. *Patula*, *Held.* 1837. *Hel. alternata.*
- Discus*, *Fitz.* *Eyromphala*, sp. *Beck.* *Patula*, *Held.* 1837. *H. ruderata.*
- Gonyodiscus*, *Fitz.* *Eyromphala*, sp. *Beck.* *H. solaris.*
- Pyramidula*, *Fitz.* *Eyromphala*, sp. *Beck.* *H. rupestris.*
463. *Sagda*, *Beck*, 1837. *Epistyla*, *Swains.* 1840. *Epistylum*, *Gray*, 1840. *Helicostyla*, sp. *Férus.* *Trochus alveolatus.*
- Helicodonta*, sp. *Férus.* *Sagda*, sp. ? *Beck.* *Helix gularis.*
- ? *Pitys*, *Beck.* *Pitys aparana.*
464. *Streptaxis*, *Gray*, *Swains.* 1840. *Artemon*, *Beck*, 1837. *Helix contusa.*

BULIMINA.

465. *Orthostylus*, *Beck*, 1837. *Cochlostyla*, sp. *Férus.* *Helix viridis.*
- Cochlostyla* α , *Férus.* *Orthostylus*, sp. *Beck.* *Bul. metaformis.*
- ? *Pythohelis*, *Swains.* 1840. *P. castanea.*
- Balea*, *Blainv.* 1825; not *Leach.* *Bulimus citrinus.*
- Helicobulimus*, *Brod.* 1840. *Orthostylus*, sp. *Beck*, 1837. *H. sarcinosa.*
466. *Bulimus*, *Scopol.* 1777; *Brug.* 1792; *Lamk.* 1801; *Montf.* 1810; *Beck*, 1837. *Melania*, *Perry*, 1811; not *Lam.* *Bul. hæmastomus.*
- Strophocheilus*, sp. *Spix.* *Bulimus*, sp. *Lamk.*, *Férus.* *Bul. ovatus.*
- Strophocheilus*, *Spix.* *Partula*, sp. *Férus.* *Voluta*, sp. *Dillw.*
- Bulimus*, sp. *Brug.* *H. pudica.*
- Gonyostomus*, *Beck*, 1837. *Gonyostoma*, *Swains.* 1840. *Pupa*, sp. *Gray.* *Cochlogena*, sp. *Férus.* *Hel. gonyostoma.*
- Odontostomus*, *Beck*, 1837. *Cochlodina*, sp. *Férus.* *Pupa*, sp. *Menke.* *Hel. gargantula.*
- Auricula*, sp. *Lea.* *Aur. fuscagula.*
- Clausilia*, sp. *Spix.* *Pupa*, sp. *Wagner.* *Claus. exesa.*
- Scarabus*, sp. *Menke.* *Scar. labrosa.*
- Stenostoma*, *Spix.* *Pelekocheilus*, sp. *Beck.* *St. Paru.*
- Caprella*, *Guild.* 1825; not *Lamk.* *Plekocheilus*, *Guild.* *Pelekocheilus*, *Beck.* *Carychium*, *Leach*, 1817; not *Müller.* *Auricula*, sp. *Lam.* *Voluta auris* *Selini.*
- Auricula*, *Swains.* 1840. *Auricula*, sp. *Lamk.* *Pelekocheilus*, sp. *Beck.* *Pupa*, sp. *Gray.* *Bulimus auris* *Selini.*
- Otostomus*, *Beck*, 1837. *Auricula*, sp. *Wagner.* *Auris*, sp. *Spix.*
- Stomatoides*, *Férus.* *Auris signata.*

- Stenostoma, Spix.* *Otostomus, sp. Beck.* *Auricula, sp. Lam., Swains.* *Bulimus, sp. Brug.* *Pupa, sp. Gray.* *Auricula Le-
poris.*
Navicula, Spix. *Otostomus, sp. Beck.* *Helicogena, sp. Moricd.*
Nav. fasciata.
Pachyotus, Beck. *Voluta, sp. Chemn.* *Pupa, sp. Gray.* *Coch-
logena, sp. Férus.* *Vol. auris vulpina.*
Auris, Spix. *Bulimus, Swains.* *Bulimus, sp. Sow.* *Pachyotus, sp.
Beck.* *Bul. melanostomus.*
Placostylus, Beck, 1837. *Auricula, sp. Lamk.* *Bulimus, sp.
Brug.* *Cochlogena, sp. Férus.* *Vol. australis.*
467. *Partula, Férus.* *Limax, Martyn.* *Partulus, Beck, 1837.* *Vo-
luta, sp. Chemn.* *Helix, sp. Dillw., Quoy & Gaim.* *Limax
faba.*
468. *Zua, Leach MSS. 1819; Gray, 1840.* *Bulimus, sp. Brug.*
Achatina, sp. Menke. *Cionella, sp. Jeffreys, Beck.* *Helix
lubrica.*
Ageca, Leach MSS. 1819; Fleming, 1828; Gray. *Pupa, sp.
Menke.* *Cochlodonta, sp. Férus.* *Cionella, sp. Jeffreys.* *Ca-
rychium, sp. Pfeiffer, Jeffreys.* *Turbo tridens.*
? *Pegea, Risso, 1836 (jun.?).* *P. carnea.*
? *Crenea, Risso, 1826.* *Cr. vitrea.*
469. ? *Tornatellina, Beck, 1837.* *Torn. clausa.*
Strombilus, Alton, 1839. *St. turritus.*
Elasmatina, Petit, 1843. *E. subulatus.*
470. *Bulimulus, Leach MSS.; Risso, 1826.* *Buliminus, sp. Beck.*
Bulimus, sp. Lam. *Cochlogena, sp. Férus., D'Orb.* *Zebrina,
Held. 1837.* *Helix detrita.*
Bulimulus, Guild., Swains. *Bulimus, sp. Beck.* *Bul. stramineus.*
Stenostoma, Spix. *Bulimus, sp. Spix.* *Bulimulus, sp. Beck.*
St. Capueira.
Buliminus, Ehrenb., Beck. *Pupa, sp. Lamk.* *Pupa labrosa.*
Buliminus, sp. Beck. *Bulimus proteus.*
Ena, Leach MSS. 1819; Gray. *Mendigera, Held. 1837.* *Buli-
mus, sp. Lamk.* *Bul. montanus.*
Brephulus, Beck, 1837. *Pupa, sp. Lam.* *Bulimus, sp. Menke.*
Bul. fasciolatus.
Chondrus α , Cuvier, 1817. *Pupa, sp. Lamk.* *Brephulus, sp. Beck.*
Bul. zebra.
Clausilia, sp. Blainv. *Pupa, sp. Lam.* *Brephulus, sp. Beck.* *Bul.
Tournefortii.*
Mastus, Beck. *Pupa, sp. Menke.* *Helix Pupa.*
Cylindrus, Fitz. *Pupa, sp. Lamk.* *Mastus, sp.? Beck.* *Pupa
obtusa.*
Macroceramus, Guild., Beck. *Leptospira, Swains. 1840.* *Coch-
lodina, sp. Férus.* *Bul. signatus.*
Elisma, Leach MSS. 1819; Longæva, Megerle; Menke, 1830.
Cochlicella, Férus.; Risso, 1826. *Cochlicellus, Beck.* *Turbo,
sp. Penn.* *Bulimus, sp. Drap.* *Helix acuta.*

- Peristoma*, *Krynicky*, 184 ? *P. merdueniana*.
Remina, *Risso*, 1826. *Bulimus*, sp. *Brug.* *Obeliscus*, sp. *Beck.*
Cochlicella, sp. *Férus.* *Orbitina*, *Risso*, 1826 ; very young.
Helix decollata.
Columna, *Spix.* *Obeliscus*, sp. *Beck*, 1837. *Cochlicella*, sp. *Férus.* *Helix calcarea*.
Obeliscus, *Beck*, 1837. *Helix obtusatus*.
Plectostylus, *Beck*, 1837. *Cochlostyla*, sp. *Férus.* *Achatina*, sp. *Lesson.* *Bul. peruvianus*.
Orthaliscus, *Beck*, 1837. *Achatina*, *Spix.* *Bulimus*, sp. *Brug.*
Cochlostyla, sp. *Férus.* *Helix Sultana*.
Achatina, *Swains.* *Orthaliscus*, sp. *Beck*, 1837. *Ach. melano-*
stoma.
Limicolaria, *Schum.* 1817. *Limicolarius*, *Beck*, 1837. *Bulla*, sp. *Chemn.* *Buccinum*, sp. *Müller.* *Cochlogena*, sp. *Férus.* *Bucc. flammeum*.
471. *Pupa*, *Lamk.* 1801 ; *Montf.* 1810 ; *Schum.* 1817. *Cochlodonta*, sp. *Férus.* *Odostomia*, sp. *Flem.* *Bulimus*, sp. *Brug.* *Turbo uva*.
Pupa, *Swains.* 1840. *Bulimus*, sp. *Brug.* *Turbo mumia*.
Gibbus, *Montf.* 1810. *Bulimus*, sp. *Brug.* *Gibbulina*, sp. *Beck.*
Hel. Lyonetiana.
Gonidomus, *Swains.* 1840. *Gibbulina*, sp. *Beck*, 1837. *Hel. Pagoda*.
Otala β , *Schum.* 1817. *Plicadomus*, *Swains.* 1840. *Gibbulina*, sp. *Beck*, 1837. *Hel. sulcata*.
Gonospira, *Swains.* 1840. *Gibbulina*, sp. *Beck*, 1837. *Hel. palanga*.
Gibbulina, sp. *Beck*, 1837. *H. infundibuliformis*.
Pupilla, *Leach MSS.* 1819. *Pupilla*, sp. *Beck.* *Bulimus*, sp. *Brug.* *Pupa*, sp. *Drap.* *Jaminia*, sp. *Risso*, 1826. *Alæa*, sp. *Jeffr.* 1820. *Torquatella*, *Held.* 1837. *Eruca*, sp. *Swains.* *Turbo muscorum*.
Orcula, *Held.* 1837. *Eruca*, *Swains.* 1840. *Pupilla*, sp. *Beck.* *Pupa*, sp. *Drap.* *Pupa dolium*.
Lauria, *Gray*, 1840. *Eruca*, sp. *Swains.* 1840. *Pupilla*, sp. *Beck.* *Pupa*, sp. *Drap.* *Jaminia*, sp. *Risso.* *Pupa umbilicata*.
472. *Vertigo*, *Müller*, 1774. *Pupilla*, *Swains.* 1840. *Jaminia*, sp. *Risso.* *Pupa*, sp. *Drap.* *Vert. pusilla*.
Isthmia, *Gray*, 1840. *Vertigo*, sp. *Férus.* *Alæa*, sp. *Jeffreys*, 1820. *Vert. nitida*.
Alæa, sp. *Jeffreys*, 1820 ; *Beck.* *Vertigo*, *Leach*, 1819. *Pupa*, sp. *Nilsson.* *Alæa palustris*.
Jaminia, sp. *Risso*, 1826. *J. heterostropha*.
? *Saraphia*, *Risso*, 1826. *S. uniplicata*.
473. *Torquilla*, *Studer*, *Beck.* *Abida*, *Leach MSS.* 1819. *Bulimus*, sp. *Brug.* *Pupa*, sp. *Lamk.* *Chondrus*, sp. *Hartm.* *Chondrus* β , *Cuv.* 1817. *Jaminia*, sp. *Risso.* *Vertigo*, sp. *Turton.* *Granaria*, *Held.* 1837. *Pupilla*, sp. *Swains.* *Pupa Secale*.
Clausilia, sp. *Risso*, 1826 ; not *Lamk.* *Pupa*, sp. *Lamk.* *Pupa cinerea*.

- Gonodon, *Held*. 1837. Chondrula, *Beck*. Chondrus α , sp. *Cuv*.
 1817. Jaminia, sp. *Risso*. Bulimus, sp. *Brug*. Pupa, sp. *Lamk*. P. tridens.
 Cyclodontina, *Beck*, 1837. Helix *Draparnaldi*.
 Clausilia, *Spix*; not *Lamk*. Cyclodontina, sp. *Beck*. Pupa, sp. *Wagn*. Cl. pupoides.
 Macrodonates, *Swains*. 1840. Cyclodontina, sp. *Beck*. H. Sowerbyana.
 Vertigo, sp. *Férus*. Cyclodontina, sp. *Beck*. V. ovularis.
 Odostomia, *Say*, 1817. Pupa, *Guild*. O. corticaria.
474. Megaspira, *Lea*, 1834; *Jay*. Pyrgelix, *Beck*, 1837. Pupa, sp. *Spix*. Macrospira, "*Lea*," *Swains*. 1840. Pupa elata.
475. Clausilia, *Drap*. 1805. Volvulus, sp. *Oken*. Odostomia, sp. *Flem*. Marpessa, *Gray*, 1821. Oxystrombus, sp. *Klein*. Helix, sp. *Linn*. Pupa, sp. *Humph. & Drap*. Strombiformis, sp. *Da Costa*. Bulimus, sp. *Brug*. Cerion, sp. *Bolten*. Turbo bidens. Iphigenia, *Gray*, 1821, 1840; not *Schum*. 1817. Clausilia, sp. *Drap*. Odostomia, sp. *Flem*. Turbo biplicatus. Glischri, *Studer*, 1820. Stomodonta, *Mermet*, 1840. Clausilina, *Ehrenb*. 1831. C. tuba paradisea.
476. Balea, *Prideaux*; *Gray*, 1824. Balia, *Swains*. 1840. Eruca, sp. *Swains*. 1840. Odostomia, sp. *Flem*. Pupa, sp. *Drap*. Anomala, *Férus*. Fusulus, *Fitz*. Turbo perversa.
477. Brachypus, *Guild*. 1829; not *Swains*. Cochlodina, sp. *Férus*. Brachypodella, sp. *Beck*, 1837. Cyliodrella, sp. *Pfeiffer*, 1840; not *Swains*. Siphonostoma, *Swains*. 1840. Pupa, sp. *D'Orb*. Tracheloides, *Férus*. Helix antiperversa. Clausilia, sp. *Lamk*. Cochlodina, sp. *Férus*. Turbo, sp. *Wood*. Claus. collaris. Urocoptis, *Beck*. Pupa, sp. *Gray*. Cyclostoma, sp. *Desh*. Turbo cylindrus. Clausilia, sp. *Lamk*. Urocoptis, sp. *Beck*. Claus. truncatula. Tortulosa. Urocoptis, sp. *Beck*. Turbo tortuosus. Apoma, *Beck*, 1837. Pupa, sp. *Gray*. Cochlodina, sp. *Férus*. Turbo elongatus.

ACHATINANA.

478. Achatina, *Lam*. 1801. Bulla, sp. *Linn*. Cochlitoma β , *Férus*. Bulimus, sp. *Brug*. Buccinum, sp. *Müller*. Bulla Achatina. Achatinus, *Montf*. 1810; *Schum*. 1817. Bulimus, sp. *Perry*. Bulla zebra. Achatina, *Swains*. 1840. Ach. marginata.
479. Columna, *Perry*, 1811; *Schum*. 1817; *Beck*. Cochlicopa, sp. *Férus*. Lymnea, sp. *Lam*. Buccinum, sp. *Müller*. Bulimus, sp. *Brug*. Helix Columna.
480. Subulina, *Beck*, 1837. Macrospira, *Guild*.; *Swains*. 1840, p. 335

- (not p. 176). *Bulimus*, sp. *Lamk.* *Cochlicopa*, sp. *Férus.* *Achatina*, sp. *Turton.* *Cionella*, sp. *Jeffreys.* "*Chionella*," *Swains.* *Melania*, sp. *Rüppell.* *Helix octona.*
481. *Acicula*, *Risso*, 1826; *Beck, Gray.* ? *Columna*, *Chr. & Jans.* *Buccinum*, sp. *Müller.* *Helix*, sp. *Gmel.* *Bulimus*, sp. *Brug.* *Achena*, sp. *Lam.* *Cochlicopa*, sp. *Férus.* *Cionella*, sp. *Jeffreys.* *Bucc. acicula.*
Columna, sp. *Chr. & Jans.* *Col. miliaris.*
482. *Leptinaria*, *Beck*, 1837. *Cochlicopa*, sp. *Férus.* *Coch. unilamellata.*
483. *Ferussacia*, *Risso*, 1826. *Vidiantius*, *Risso*, 1826, *Jun.* *Cionella*, sp. *Jeffreys, Beck.* *Physa*, sp. *Drap.* *Cochlicopa*, sp. *Férus.* *Achatina*, sp. *Michaud.* *Pupa*, sp. *Costa.* *Helix foliculus.*
484. *Liguus*, *Montf.* 1810. *Cochlitoma α*, *Férus.* *Chersina*, *Beck*, 1837. *Chersina*, sp. *Humph.* *Bulla*, sp. *Linn.* *Buccinum*, sp. *Müller.* *Bulimus*, sp. *Brug.* *Achatina*, sp. *Lam.* *Bulla virginea.*
485. *Oleacina*, *Bolten*, 1798. *Oleac.* — ?
Polyphemus, *Montf.* 1810. *Glandina*, *Schum.* 1817. *Cochlycopa*, *Swains.* 1840. *Cochlicopa α*, *Férus.* *Buccinum*, sp. *Müller.* *Bulla*, sp. *Chemn.* *Bulimus*, sp. *Brug.* *Bulla glans.* *Strömhus*, sp. *Gmelin.* *Achatina*, sp. *Brod.* *Buccinum*, sp. *Müller.* *Bucc. striatum.*
Voluta, sp. *Walch.* *Polyphemus*, sp. *Chr. & Jans.* *Vol. leucozonias.*
Polyphemus, *Say.* *Glandina*, *Say.* *Cochl. rosea.*
486. *Halia*, *Risso*, 1826; not *Dupont* nor *Macgill.* *Bulla*, sp. *Brocchi.* *Cochlicopa α*, sp. *Férus.* *Bulla helicoides.*
Priamus, *Beck*, 1837. *Ampulla*, sp. *Bolten.* *Buccinum*, sp. *Chemn.* *Bulla*, sp. *Gmelin.* *Cochlicopa α*, sp. *Férus.* *Bulimus*, sp. *Brug.* *Helix Priamus.*
487. *Helicteres*, *Férus.* 1819; *Beck*, 1837; not *Linn.* *Achatinella*, sp. *Green.* *Helix vulpina.*
Achatinella, *Swains.* 1828. *Turbo*, sp. *Chemn.* *Monodonta*, sp. *Lamk.* *Achatina*, sp. *Gray.* *Bulimus*, sp. *Menke.* *Helicteres*, sp. *Férus., Beck.* *Turbo lugubris.*

Fam. III. VERONICELLIDÆ.

488. *Veronicella*, *Blainv.* 1817; *D'Orb.* *Vaginulus*, *Férus.* 1821. *Veronicellus*, *Férus., Menke.* *Onchidium H*, *Blainv.* 1825. *Vaginula*, *Latr., Swains.* *Limax nudus*, *Sloane*, 1725. *Veron. lævis.*
Eumele, *Rafinesque.* *Limax D*, *Blainv.* 1825. *Eum. nebulosus.*

Fam. IV. ONCHIDIADÆ.

489. *Onchidium*, *Buchan*, 1800 ; *Lamk.* 1801. *Onchidium* β , *Blainv.* 1825. *Oncidium*, *Agass.* *Onchidia*, *Swains.* *O. Typhæ.*
 490. *Buchannia*, *Lesson*, 1830.
 491. *Peronia*, *Blainv.* 1825. *Onchidium*, *Cuvier*, 1805. *Onchis*, sp. *Férus.* 1821. *Oncis*, *Herrm.* *Oncus*, *Agass.* *Onch.* *Peronii.*

Fam. V. AURICULIDÆ.

492. *Auricula*, *Lam.* 1799, 1801 ; *Schum.* 1817. *Otis*, sp. *Humph.* 1797. *Marsyas*, *Oken*, 1818. *Geovula*, *Swains.* 1840. *Bulimus*, sp. *Brug.* *Ellobium*, *Bolten.* *Aur.* *Midæ.*
Auriculus, *Montf.* 1810. *A.* *Judæ.*
 493. *Melampus*, *Montf.* 1810. *Melampa*, *Schweiger.* *Conovule*, *Lam.* 1812. *Conovulus*, *Lamk., Beck.* *Conovula*, *Latr.* *Conovulum*, *Sow.* *Pedipes c*, *Blainv.* *Rhodostoma*, *Swains.* 1840. *Vol. coniformis.*
Melampus, *Say ; Beck,* 1837, not *Montf.* *Conovulus*, sp. *Gray.* *Mel. lineatus.*
 494. *Cassidula*, *Férus. ; Beck,* 1837. *Sidula*, *Gray,* 1840. *Limax*, sp. *Martyn.* *V. auris felis.*
Lirator, *Beck,* 1837. *L. multisulcatus.*
Tralia, *Gray,* 1840. *Auricula*, sp. *Férus.* *Pythia*, sp. *Beck.* *Melampa*, *Schweiger.* *V. pusilla.*
Melampus, *Lowe,* not *Montf.* *Mel. æqualis.*
Detracia, *Gray,* 1840. *Tornatella*, sp. *Férus.* *Vol. bullæoides.*
 495. *Pedipes*, *Adans.* 1757 ; *Blainv.* 1825. *Polydonta*, sp. *Fischer.* *Bulimus*, sp. *Brug.* *Tornatella*, sp. *Lamk.* *P. afra.*
 496. *Marinula*, *King,* 1835. *Rhodostoma*, sp. *Swains.* 1840. *Pythia*, sp. *Beck.* *M. pepita.*
 497. *Ophicardelus*, *Beck,* 1837. *Aur. australis.*
 498. *Alexia*, *Leach MSS.* 1819. *Ovatella*, *Gray,* 1840 ; not *Bivon.* *Acteon*, sp. *Flem.* *Auricula*, sp. *Lamk.* *Pythia*, *Gray,* 1821 ; *Beck,* not *Schum.* *Jaminia*, *Brown,* not *Risso.* *Vol. denticulata.* *Carychium*, sp. *Michel.* *Aur. personata.*
 499. *Leuconia*, *Gray,* 1840. *Volvaria*, sp. *Flem.* *Voluta alba.* *Jaminea*, *Leach MSS.* *Vol. bidentata.* *Ovatilla*, sp. *Bivon,* 1832. *Ovat. bidentata.*
 500. *Scarabus*, *Montf.* 1810. *Phytia*, *Schum.* 1817. *Polydonta*, *Fischer, Beck.* *Sc. imbrium.* *Melanopsis*, *Bosc.* *Strigula*, *Perry,* 1811.
 501. *Carychium*, *Müller,* 1774. *Bulimus*, sp. *Brug.* *Odostomia*, sp. *Flem.* *Auricula*, sp. *Drap.* *Auricella*, *Jurine, Hartm.* 1821. *Car. minimum.*

502. *Acmea*, *Hartm.* 1821. *Acme*, *Hartm.* 1821. *Carychium*, sp. *Flem.* *Cyclostoma*, sp. *Férus.* *Bulimus*, sp. *Turton.* *Turbo*, sp. *Montag.* *Auricula*, sp. *Drap.* *Acicula*, *Hartm.* *Carychium*, *Studer.* *Turbo fuscus.*

Fam. VI. LIMNÆADÆ.

LIMNÆINA.

503. *Lymnæa*, *Lam.* 1801. *Limnea*, *Flem.* *Limneus*, *Drap.* *Limnæus*, *Oken*, *Rossm.* *Lymnus*, *Montf.* 1810. *Lymnæa*, *Blainv.* *Limnea*, *Swains.* 1840. *Lymnia*, *Swains.* 1837. *Lymnophysa*, *Fitz.* *Lymnula*, *Rafin.* *Bulimus*, sp. *Scopoli*, 1771. *Vesica*, sp. *Humph.* 1797. *Buccinum*, sp. *Müller.* *Helix*, sp. *Linn.* *Bulimus*, sp. *Brug.* *Helix stagnalis.*
Leptolimnea, *Swains.* 1840. *L. elongata.*
Radix, *Montf.* 1810. *Lymnæa* β , *Schum.* *Gulnaria*, *Leach* MSS. 1819; *Beck*, 1837. *H. auricularia.*
 ? *Espiphylla*, *Rafin.* 1819.
 ? *Clymenis*, *Rafin.* 1819.
 ? *Leptoxis*, *Rafin.* 1819.
 ? *Lomastoma*, *Rafin.* 1819.
 ? *Eutrema*, *Rafin.* 1819.
Omphiscola, *Rafin.*, *Beck.* *Stagnicola*, sp. *Leach.* *Bulimus*, sp. *Poiret.* *Bucc. glabrum.*
Limnophysa, *Fitz.*, *Beck.* *Galba*, *Schrank.* *Lymnea*, sp. *Lam.* *Stagnicola*, sp. *Leach.* *Bucc. palustre.*
504. *Chilina*, *Gray*, *D'Orb.* *Limnea*, sp. *D'Orb.* *Dombeya*, *D'Orb.* *Conovula*, sp. *Lam.* *Auricula*, sp. *Férus.* *Otis*, sp. *Humph.* *Bulimus*, sp. *Brug.* *Bul. Dombeyanus.*
505. *Amphipeplea*, *Nilsson*, 1822. *Myxas*, *Leach* MSS. 1819. *Buccinum*, sp. *Müller.* *Limneus*, sp. *Drap.* "Mixas," *Say.* *Lutea*, *Brown*, 1827. *Bulimus*, sp. *Brug.* *Hel. glutinosa.*
506. *Bulinus*, *Adans.* 1757. *Bullinus*, *Oken*, 1815. *Bul. —?*
Physa, *Drap.*; *Lam.* 1812. *Planorbis*, sp. *Müller.* *Bulimus*, sp. *Brug.* *Physa*, *Risso*, 1826. *Anisus*, *Studer.* *Rivicola*, *Fitz.* *Bulla fontinalis.*
507. *Aplexa*, *Flem.* 1824; *Beck.* *Nauta*, *Leach* MSS. 1819. *Myxas*, "Leach," *Guild.* *Physa*, *Fitz.* *Limnea*, sp. *Sow.* *Bulla hypnorum.*
Diastrophia, *Guild.*, *Gray.* *Ph. Guildingii.*
Isidora, *Ehrenb.* 1831; *Beck.* *Ph. truncata.*
Camptoceras, *Benson*, 1834. *C. terebra.*

CORETINA.

508. *Coretus*, *Adans.* 1757. *Planorbis*, sp. *Guettard?*, *Müller.* *Planorbis*, *Geoff.*, *Montf.*; not *Lam.* 1801. *Vortex*, sp. *Humph.* 1797. *Helix cornea.*
Anisus, *Fitz.*, *Studer.* *Spirorbis*, *Swains.* 1840. *H. spirorbis.*

Helisoma, *Swains.* 1840. *H. complanata*.
Nautilus, sp. *Linn.* Turbo, sp. *Linn.* Turbo nautilus.
Anisus, *Beck.* Pl. olivaceus.
Polygyrus, *Beck*, 1837. *Helix contortus*.
Dentatus, *Beck*, 1837. Plan. armatus.

509. *Segmentina*, *Flem.* 1824. *Hemithalamus*, *Leach MSS.* 1819.
Segmentaria, *Swains.* 1840. *Nautilus*, sp. *Lightf.* Planorbis,
 sp. *Müller.* Naut. lacustris.
Discus, *Haldemann*, 1840; not *Fitz.* 1833, nor *King*, 1844.
 D. —?

ANCYLINA.

510. *Ancylus*, *Geoff.* 1767; *Müller*, 1774. *Bullinus*, sp. *Oken*, 1815.
Ansulus, *Herrm.* 1846. *Patella*, sp. *Linn.* Pat. fluviatilis.
Calyptra, sp. *Klein.* *Crepidula*, sp. *Flem.* *Acroloxus*, *Beck*, 1837.
Velletia, *Gray*, 1840. *Ancylus*, sp. *Müller*, 1774. Pat. oblonga.
Ancylus, *Guild.* 1828. Ancy. —?

Fam. VII. AMPHIBOLIDÆ.

511. *Amphibola*, *Schum.* 1817. *Ampullacera*, *Quoy & Gaim.* 1832.
Thalicera, "Quoy," *Swains.* 1840. *Ampullarina*, *Sow.*, not
Blainv. Amph. australis.
Paludina, sp. *Sow.* Pal. australis.

Fam. VIII. SIPHONARIADÆ.

512. *Siphonaria*, *Sow.*, *Blainv.* 1825. *Lepas* (Mouret), *Adans.* 1757.
Mouretia (*Gray*), *Sow.* 1835. *Muretia*, "Sow.," *D'Orb.* Pa-
 tella (juniore), *Rang.* *Liria*, *Gray MSS.* 1824. Siph. siph.

Fam. IX. GADINIADÆ.

513. *Gadinia*, *Gray*, 1824. *Lepas gadin*, *Adans.* 1757. Gad. afra.
Mouretia, *Sow.* 1835. Mour. peruviana.
Pileopsis, sp. *Payr.* 1836. *Clypeus*, *Scacchi*, 1836; not *Brod.*
Patella, sp. *Philippi.* *Acmæa*, sp.? *Philippi.* Pat. Garnoti.

Fam. X. CYCLOPHORIDÆ.

514. *Cyclostomus*, *Montf.* 1810. *Cyclostome*, *Lam.* 1812 (not 1801),
 not *Schum.* 1817. *Cyclostoma*, sp. *Drap.* Turbo elegans.
 515. *Licina*, *Browne*, 1756. *Cyclostoma*, sp. *Lam. E.M.* *Cyclostoma*,
Swains. 1840, not *Lam.* 1801. *Nerita*, sp. *Müller.* *Annularia* β,
Schum. 1817. Turbo labea.
Cistula, *Humph.* 1797. Cist. fimbriata.
 516. *Poteria*, *Gray*, 1840.
 517. *Leonia*, *Gray*, 1840.

518. ? *Lituus*, *Martyn*, 1784; *Humph.* 1797; not *Breyn.* 1732. *L. brevis*.
519. *Cyclophorus*, *Montf.* 1810. *Cyclophora*, *Swains.* 1840. *Anularia* α , *Schum.* 1817.
520. *Cyclotus*, *Guild.*, *Swains.* 1840. *Cycl. planorbutus*.
521. *Myxostoma*, *Troschel*, 1847. *Cyc. Petiverianus*.
522. *Pterocyclos*, *Benson*, 1835. *Spiraculum*, *Pearson*, 1835. *Pt. bilabiatus*.
523. *Farcimen*, *Troschel*, 1847. *Cycl. Torta*.
524. *Megalomastoma*, *Guild.*, *Swains.* 1840. *Cyclos. flavulum*.
525. *Realia*, *Gray*, 1840. *R.* — ? n. s.
526. *Callia*, *Gray*, 1840; 1844, 72. *C.* — ? n. s.
527. *Pupina*, *Vignard*, 1829?; *Gray*, 1844. *Pupina Keraudrenii*.
Moulinia, *Grateloup*, 1840. *Pupina*, sp. *G. Sow.* 1841. *M. Nunezii*.
528. *Registoma*, *Hasselt*, 1824. *Reg. vitreum*.
529. *Pomatias*, *Hartm.* 1821. *Cyclostoma*, sp. *Lam.* *Cy. patula*.
530. ? *Ferussina*, *Grateloup*, 1826. *Ferussacia*, *Lefroy*, 1828; not *Risso*, 1826. *Strophostoma*, *Desh.* 1827. *Anastoma*, sp. — ?
F. anastomæformis.

Fam. XI. OLIGYRADÆ.

531. *Oligyra*, *Say*, 183 ? *Helicina* β , *Blainv.* 1825. *O. orbiculata*.
Helicina, *Lam.* 1822 (not 1801); not *Montf.* *Hel. neritella*.
Pachystoma, *Swains.* 1840. *P. occidentalis*.
Trochatella, *Swains.* 1840. *H. pulchella*.
Ampullina, *Blainv.* 1825. *A. striata*.
Oligyra, *Swains.* 1840. *H. rhodostoma*.
532. *Lucidella*, *Swains.* 1840. *H. aureola*.
Helix, sp. *Férus.* *Helicina*, sp. *Gray*.
533. *Alcadia*, *Gray*, 1840. *Helicina*, *Swains.* 1840. *H. major*.

Fam. XII. PROSERPINIDÆ.

534. *Proserpina*, *Gray*, 1840 (*Procerpena misprint*). *Odontostoma*,
D'Orb. 1842. *P. linguifera*.

Class II. CONCHIFERA.

Order I. PHYLLOPODA.

Fam. I. VENERIDÆ.

MERETRICINA.

535. *Dosinia*, *Scopoli*, 1771. *Chama* (Dosin), *Adans.* Venus — ?
Arthemis and *Arthemiderma*, *Poli*, 1791 (*Artemis*, *Gray*, *Forbes*).
Orbiculus *b*, *Megerle*, 1811. *Exoleta*, *Brown*, 1827. *Asa*, *Leach*,
 1819. Venus β , *Schum.* 1817. *Circompholos*, *Klein.* Venus
exoleta.
Arctoë, *Risso*, 1826. *Arct. nitidissima*.
Lucina, sp. *Lam.* 1818. *Cytherea*, sp. *Macgill.* *Artemis*, sp.
Reclus. *Mysia*, sp. *King.* V. undata.
536. *Meretrix*, *Lam.* 1801. *Cytherea*, *Lam.* 1818; *Schum.* 1817;
Gray, 1838. *Cytheree*, *Lam.* 1812. *Callista*, sp. *Poli.* Venus
Meretrix.
537. *Cuneus*, *Megerle*, 1811; not *Dacosta.* *Meroë*, *Schum.* 1817;
Gray, 1838. Venus *Meroë*.
538. *Grateloupia*, *Desmoul.* 1828; *Gray*, 1838. *Gratelupia*, *Pol. &*
Mich. *Donax irregularis*.
539. *Trigona*, *Megerle*, 1811; *Schum.* 1817; *Gray*, 1838. Venus
mactroides.
Trigona, *Megerle*, 1811. Venus *donacina*.
540. *Dione.* Venus, *Megerle*, 1811; *Schum.* 1817. *Cytherea*, sp.
Lam. 1818. *Chione*, sp. *Gray*, 1838; not *Megerle.* Venus
Dione.
Chione, *Gray*, 1838. *Callista* and *Callistoderma*, sp. *Poli*, 1795.
Cytherea, sp. *Swains.* 1840. Venus *Chione*.
541. *Circe*, *Schum.* 1817. *Cytherea*, sp. *Lamk.* Venus *scripta*.
542. Venus, *Linn.*; *Lam.* 1801. *Dosina*, *Gray*, 1838. *Clausina*, sp.
Brown, 1827; not *Jeffreys.* *Callista* and *Callistoderma*, sp.
Poli, 1795. Venus *verrucosa*.
 Venus, sp. *Swains.* 1840, 372. V. *puerpera*.

VENUSINA.

543. *Mercenaria*, *Schum.* 1817. Venus, sp. *Lam.* Venus *Mercenaria*.
544. *Anomalocardia*, *Schum.* 1817. Venus *m* (*Triquetra*), *Blainv.*
 1825. Venus *flexuosa*.
545. *Cyprina*, *Lam.* 1818. *Cyprine*, *Lam.* 1812. *Arctica*, *Schum.*
 1817. Venus *Islandica*.
546. *Chione*, *Megerle*, 1811; not *Gray*, 1838. Venus, sp. *Linn. &*
Lam. Venus *Dysera*.

- Chione, *Megerle*, 1811. Callista and Callistoderma, sp. *Poli*.
 Ortygia, *Brown*, 1827. Venus gallina.
 Timoclea, *Leach MSS.* 1819; *Brown*, 1827. Venus ovata.
 Antigone *Schum.* 1817. Venus cancellata.
547. Tapes, *Megerle*, 1811. Callista and Callistoderma, sp. *Poli*, 1795.
 Venus litteratus.
 Pullastra, sp. *Sow.* Tapes, sp. *Schum.* 1817. Capsa, sp. *Leach*,
 1817; not *Lam.* V. Pullastra.
548. Rupellaria, *Bellev.* 1802. Rupellare, *Lam.* 1812. Venerupis,
Lam. 1818; *Turton*, 1822. Venus β . (Ruperelle), *Blainv.* 1825.
 Venus perforans.
 Irus, *Oken*, 1815. Capsa, sp. *Leach*, 1819. Petricola, sp. *Turton*,
 1822; *D'Orb.* Venerupes, *Swains.* 1840. Donax Irus.
 Venus, sp. *Olivi.* Venus Lithophagus.
 ? Petricola, *Lam.* 1810. Petr. sulcata.
549. Clementia, *Gray*, 1840. Venus papyracea, *Gray in Wood Supp.*
 f. 8.
- 549*. Glauconome, *Gray*, 1829. G. chinensis.
550. Capsa, *Lam.* 1801 (not 1818). Capsula, *Schum.* 1817. San-
 guinolaria, sp. *Lam.* 1818. Solen β , *Megerle*, 1811. Psam-
 mobia, sp. *Turton*, 1822; *Sow.* Venus deflorata.
551. Petricola, *Lam.* 1801; sp. 1818. Venus, sp. *Retzius.* Venus
 Lithophagus.
 Petricola, sp. *Lam.* 1801 & 1818. Pet. striata.
 Gastrana α , *Schum.* 1817. Tellina guinaica.
 Gastrana β , *Schum.* 1817. Corbula, sp. *Brug.* Venus monstrosa.
 Psammobia, sp. *Lam.* 1818. Tellina fragilis.
 ? Choristodon, *Jonas.* Ch. typicum.
 —? Mysia, sp. *Leach.*

Fam. II. CORBICULADÆ.

552. Corbicula, *Megerle*, 1811. Cyclas, sp. *Lam.* 1801. Cyrena α ,
 sp. *Lam.* 1818; from *Chemn.* vi. f. 320. Corb. fluminalis.
 Cyclas, *Schum.* 1817. ? Cyrena α , sp. *Lam.* Cyc. lævigata.
 Cyprina, sp. *Lesson*, 1830; not *Lam.* Cyrena α , sp. *Lam.* 1818.
 Cyrena violacea.
553. Cyrena β , *Lam.* 1818. Geloina, *Gray*, 1844, 75. Cyr. zey-
 lanica.
 Cyrena, *Sow.* Cyr. sumatrensis.
 Cyclas, *Bosc.* Cyc. carolinensis.
554. Velorita, *Gray*, 1844, 75. Cyrena, sp. *Gray.* Cyr. cyprinoides.
555. Sphærium, *Scopoli*, 1777. Nux, *Humph.* 1797. Cyclas, sp.
Lam. 1801. Cyclas, *Lam.* 1818. Cornea, *Megerle*, 1811.
 Tellina cornea.
556. Pisum, *Megerle*, 1811; not *Linn.* Pisidium, *Pfeiffer.* Pera,

Leach MSS. 1819; *Gray*. *Euglesia*, *Leach MSS.* 1820. *Cardium*, sp. *Poli.* *Tellina amnica*.
Galileja, *Costa*, 1846. *Cyclas fontinalis*.

Fam. III. CARDIADÆ.

557. *Cardium*, *Linn.*; *Lam.* 1801; *Megerle*, 1811; *Swains.* 1840. *Cerastes* and *Cerastodermi*, sp. *Poli.* *Pectunculus*, *Adans.* *Card. costatum*.
Lævicardium, *Swains.* 1840. *C. lævigatum*.
Lævicardium, sp. *Swains.* 1840. *C. Æolicum*.
Hemicardium, *Swains.* 1840. *C. unedo*.
 558. *Cardissa*, *Megerle*, 1811. *Hemicardium*, *Cuvier*, 1817. *Hemicardia*, *Klein*, 1753. "Fragrum and Corculum," *Bolten*, 1778. *Isocardia*, *Oken*, 1817. *Card. Cardissa*.
 559. *Aphrodite*, *Lea*; 183 ? not *Linn.* *Serripes*, *Beck MSS.* *Acardo*, *Swains.* 1840; not *Brug.* nor *Lamk.* *Mactra*, sp. *Don.* *Cardium edentulum*.
Corbula, sp. *Eichwald*, 1838. *Corb. caspia*.
Cardium, sp. *Eichw.* 1838. *Card. protractum*.
Glycimeris, *Eichw.* 1838. *Gly. læviuscula*.
Hypnaxis, *Pander*, 1830. *Monodacna* and *Adacna*, *Eichw.* 1838. *M. — ?*
 560. *Papyridea*, *Swains.* 1840. *Card. Soleniforme*.
Papyridea, sp. *Swains.* *Card. ringens*.
 561. ? *Cardium*, sp. *Lam.* *Hippopus*, sp. *Sow.* *Pleurorhynchus*, sp. *Swains.* 1840. *Card. avicularia*.

Fam. IV. MACTRADÆ.

562. *Mactra*, *Linn.*; *Lam.* 1801; *Gray*, 1837. *Callista* and *Callistoderma*, sp. *Poli.* *Trigonella*, sp. *Dacosta*, 1778; not *Dec.* *Mact. stultorum*.
 563. *Schizodesma*, *Gray*, 1837. *Mactra* α , *Schum.* 1817. *M. Spengleri*.
 564. *Spisula*, *Gray*, 1837. *Mactra*, sp. *Lam.* *Trigonella*, sp. *Dacosta*, 1778. *M. solida*.
Hemimactra, *Swains.* 1840. *M. gigantea*.
 565. *Cypricia*, *Gray*, 1837. *Anatina*, *Schum.* 1817; not *Lam.* *Mactra*, sp. *Spengler*. *Labiosa*, *Schmidt MSS.*; *Moller*, 1832. *Lutraria*, sp. *Lam.*, *Sow.* *Listera*, sp. *Menke*, 1830. *M. anatina*.
 566. *Lutraria*, *Lam.* 1799, 1801; *Schum.* 1817; *Gray*, 1837. *Lutricola*, *Blainv.* 1825. *Cultellus*, *Sow.*; not *Schum.* *Mya oblonga*.
Lutraria, *Megerle*, 1811. *Mact. Lutraria*.
Lutraria, sp. *Lam.* *Mact. rugosa*.
 567. *Cryptodon*, *Conrad*, 1837; not *Turton*, 1822. *Lutraria*, sp. *Conrad.* *C. Nuttallii*.

568. *Mulinia*, *Gray*, 1837 (*Moulinea*, *Philippi*). *M. lateralis*.
 569. *Gnathodon*, *Gray*, 1837; *Rang.* *Clathodon*, *Sow.* *Clathrodon*,
Conrad. *Rangia*, *Desmoul.* 18 ? *Gn. cuneatus*.
 570. *Anatinella*, *Sow.*; *Desh.* 1835. *A. Sibbaldii*.
 571. ? *Macrula*, *Risso*, 1826. *M. Trinitea*.

Fam. V. PAPHIADÆ.

572. *Paphia*, *Lam.* 1801. *Crassatella*, sp. *Lam.* 1818. *Erycina*, sp.
Sow. *Mesodesma*, sp. *Desh.* 1835. *Eryx*, *Swains.* 1840; not
Daud. *Paphia glabrata*.
Mesodesma, sp. *Desh.* 1835. *Mya novæ zelandiæ*.
Donacilla, sp. *D'Orb.* *Erycina*, sp. *Brod.* 1832. *E. solenoides*.
Donacilla, *Lam.* 1818. *Donacille*, *Lam.* 1812. *Donacina*, *Blainv.*
Amphidesma, sp. *Lam.* 1818. *Mactra*, sp. *Poli.* *Mesodesma*,
sp. *Desh.* 1830. *Erycina*, sp. *Sow.* *Peronæa* and *Peroneoderma*,
sp. *Poli.* 1791. *Mactra cornea*.
Erycina, sp. *Reclus*, 1844. *Eryc. Deshayii*.
573. *Anapa*, *Gray*, 1844. *Erycina*, sp. *Reclus*, *D'Orb.* *E. Petitiona*.
574. ? *Ervillia*, *Turton*, 1822. *Ervillia*, sp. *Reclus*, 1846. *E. nitens*.

Fam. VI. TELLINIDÆ.

575. *Psammobia*, *Lam.* 1818; *Sow.* *Tellina*, sp. *Linn.* *Gari α*,
Schum. 1817. *Solen*, *Megerle*, 1811. *Peronæa* and *Peroneo-*
derma, sp. *Poli.* *Tellina Gari*.
Azor, *Leach MSS.* 1819. *Solen vespertinus*.
Psammotea, *Lam.* 1818. *Psam. zonalis*.
576. *Gari β*, *Schum.* 1817, 132. *Tellina*, sp. *Spengler & Lamk.* *San-*
guinolaria, sp. *Desh.* *Tellina papyracea*.
? *Scrobicularia β*, *Schum.* 1817. *Tel. angulata*.
577. *Tellina*, *Linn.*; *Lam.* 1801. *Peronæa*, sp. *Poli.* *Tel. radiata*.
Angulus, *Megerle*, 1811. *Psammotea*, *Lam.* 1818. *Tel. lanceolata*.
Macroma, *Leach*, 1819. *M. tenera*.
Psammotea, *Turton*, 1822. *Tel. solidula*.
Tellinides, *Lam.* 1818. *Tel. timorensis*.
Tellinides, *Sow.* *Tel. roseus*.
Omala, *Schum.* 1817. *T. planata*.
Phylloda, *Schum.* 1817. *T. foliacea*.
578. *Arcopagia*, *Leach*, 1816; *Brown*, 1827. *Tel. crassa*.
Tellina β, *Megerle*, 1811. *Tel. scrobinata*.
Solecurtus, sp. *Gray.* *Psammobia*, sp. *Philippi.* *Arcopagia*, sp.
D'Orb. *S. solida*.
579. *Strigilla*, sp. *Turton*, 1822. *Lucina*, sp. *Lamk.* *Tellina carnaria*.
580. *Semele*, *Schum.* 1817. *Amphidesma*, sp. *Gray*, *Sow.* *Tel. re-*
ticulata.

- Amphidesma, sp. *Lam.* 1818. Tellina, sp. *Brug.* Amph. variegata. Cumingia, *Sow.* 1833. Lavignon, sp. *D'Orb.* C. lamellosa.
581. Arenaria, *Megerle*, 1811; not *Linn.* Scrobicularia α , *Schum.* 1817. Ligula β , sp. *Montag.* 1808. Abra, sp. *Leach MSS.* 1819. Lavignon, *Cuvier*, 1817. Lavignonus, *Férus.* 1821. Listera, *Turton*, 1822; *Menke*; not *R. Brown.* Lutricola, *Blainv.* Lutraria, *Swains.* 1840. Amphidesma, sp. *Sow.* Lutraria, sp. *Lam.* 1818. Trigonella, *Lovèn*, 1846. Trigonella, sp. *Dacosta*, 1778. Chama calcinella, *Adans.* Mya compressa.
582. Abra, *Leach MSS.* 1817 (fide *Lam.* 1818). Syndosmya, *Recluz*, 1846; *Lovèn.* Amphidesma, sp. *Lam.* Ligula β , *Montag.* 1808; not *Menke*, 1830. Mactra tenuis. Abra, *Risso*, 1826. A. fragilis. Erycina, *Lam.* 1818?; *Philippi*, 1846. Amphidesma, sp. *Lam.*; *Turton*, 1822. Mactra Boysii. Tellina, sp. *Poli.* T. rubiginosa.
583. Donax, *Linn.*; *Lam.* 1801. Tellina, *Adans.* 1757. Peronæa, sp. *Poli.* Donax rugosa. Donax, sp. *Scopoli*, 1777. Don. —? Capisteria, *Gevers*, 1787. Don. —? Hecuba, *Schum.* 1817. Donax, *Swains.* Donax, sp. *Lam.* Don. scrotum. Chion, *Scopoli*, 1777. Don. denticulata. Latona, *Schum.* 1817. Don. cuneata. Capsa, sp. *Sow.* D. complanata. Potamomya, *J. Sow.*; *D'Orb. A. M.*; not *Hinds.*
584. Iphigenia, *Schum.* 1817; not *Gray*, 1821. Capsa, *Lam.* 1818; not 1801. Donacina, *Férus.*; not *Blainv.* Donax, sp. *Gmel.*, *D'Orb.* Don. lævigata. ? Capsa, *Turton*, 1822. Don. castanea.
585. Galathea, *Brug.* 1798; *Lam.* 1812; not *Fab.* Egeria, *Roissy*, 1805; not *Lea*, 1833, nor *Leach*, 1815. Potamophila, *Sow.*; not . Megadesma, *Bowdich*, 18 ?; *Swains.* 1840. Galathea, *Flem.* 1828. Pectunculus, sp. *Humph.* 1797. Tellina, sp. *Dillw.* Venus, sp. *Born.* Venus reclusa.

Order II. CLADOPODA.

Fam. I. PHOLADIDÆ.

PHOLADINA.

586. Pholas, *Linn.*; *Lam.* 1801. Ph. costatus. Barnia, *Leach MSS.* 1819. Barnea, *Risso*, 1826. Ph. candida. Pholas, *Adans.* 1757. Ph. Tulan. Pholas, sp. *Montag.* Ph. parva.
587. Dactylina. Pholas, sp. *Linn.*; *Lam.* 1818. Hypogæa and Hypogeoderma, *Poli*, 1791. Ph. Dactylus. Thovana, *Leach MSS.* 1818. Ph. oblongata.

588. Zirfæa, *Leach*, 1817. *Ph. crispata*.
 589. Pholadidea, *Turton*, 1819. Pholadidoidea, "*Goodall*"; *Blainv.* 1825. Pholidæa, "*Leach*"; *Swains.* 1840. Pholas, sp. *Turton*. *Phol. papyracea*.
 590. Talona, *Gray*, 1840. *Teredo clausa*.
 591. Xylophaga, *Turton*, 1822. Pholas, sp. *Desh.* 1835. *Xyl. dorsalis*.
 592. Jouannetia, *Desmoulin*, 1828. Pholas, sp. *Desh.* 1835. *Jouan. semicaudata*.
 593. Martesia, "*Leach*, 1818"; *Blainv.* 1825; *Menke*, 1830. *Mactesia*, *Mactresia*, *Gray*, *Agassiz* (misprint). Pholas, *Megerle*, 1811. Pholas D, *Blainv.* *Ph. striatus*.
Martesia, sp. *Leach*. *Mytilus*, sp. *Spengler*. *Myt. lithophagus*.
 594. Teredina, *Lam.* 1818. *Fistulana*, *Lam.* *Teredo*, sp. *Sow.* *Tered. personata*.

TEREDINA.

595. *Cuphus*, *Guettard*, 1772. *Kuphus*, *Gray*, 1840. *Kyphus*, *Agassiz*. *Furcella*, *Oken*, 1815. *Septaria*, *Lam.* 1816. *Clausaria*, *Menke*, 1828. *Clossonaria*, *Férus*. *Teredo*, sp. *Pallas*, *Home*. *Solen arenaria*, *Humph.* *Serpula*, sp. *Linn.* *Serpula polythalamia*.
 596. *Guetera*, *Gray*, *Syn.* 1840. *Fistulana*, sp. *Lam.* 1818. *Fist. corniformis*.
Teredo, *Megerle*, 1811. *Teredo*, sp. *Spengler*. *Fistulana*, sp. *Lam.* 1818. *Teredo clava*.
 597. *Xylotrya*, *Leach MSS.* 1817; *Menke*, 1830. *Bankia*, *Gray*, 1840. *Teredo a*, *Schum.* 1817. *Teredo*, sp. *Lam.* 1801; *Turton*. *Teredo β*, *Blainv.* *Teredo bipalmulata*, *Lam.*
 598. *Teredo*, *Linn.*; *Lam.* 1801. *Teredo a*, *Blainv.* *Tered. norvegica*.
Malleolus. *Tered. Malleolus*.

Fam. II. GASTROCHÆNIDÆ.

599. *Penicillus*, *Brug.* 1789; *Lam.* 1801. *Aspergillum*, *Lam.* 1818. *Adaspergillum*, *Menke*, 1830. *Arrosoir*, *Lam.* 1812. *Clepsydra*, *Schum.* 1817. *Aquaria*, *Perry*, 1811. *Arytæna*, *Oken*, 1815. *Solen Phalloides*, *Klein.* *Serpula*, sp. *Dillw.* *Serpula Aquaria*.
 600. *Foegia*, *Gray*, 1840. *Aspergillum*, sp. *Lam.* 1818. *Aspergillum novæ zelandiæ*.
 601. *Bryopa*, *Gray*, 1840. *Clavagella*, sp. *Sow. & Brod.*; *Philippi*. *Clav. aperta*.
 602. *Clavagella*, *Lam.* 1818; *Blainv.* *Clavagelle*, *Lam.* 1812. *Fistulana*, sp. *Lam.* *Glycimeris*, sp. *Lam.* (valve only). *Clav. echinata*.

603. *Chæna* α , *Retz.* 1788; *Schum.* 1817. *Fistulana*, *Lam.* 1801; *Megerle*, 1811. *Gastrochæna* β , *Blainv.* 1825. *Ch. mumia*.
604. *Gastrochæna*, *Spengler*, 1780. *Gastrochena*, *Swains.* 1840. *Chæna* β , *Retz.* 1788; *Schum.* 1817. *Fistulana*, *Brug.* 1792; *Lam.* 1801. *Roxellana*, *Bellv.* *Trapezium*, *Megerle*, 1811. *Fistulana*, sp. *Blainv.* *Pholas*, sp. *Chemn.* ? *Quoyie*, *Desh.* (*E. M.* ii. 247), 1830. *Mya dubia*.

Fam. III. SOLENIDÆ.

605. *Solen*, *Linn.*; *Lamk.* 1801; *Schum.* 1817. *Vagina*, *Megerle*, 1811; *Desmoul.* 1832. *Solen* β . *vagina*, *Blainv.* *Hypogæa*, sp. *Poli.* *Sol. vagina*.
606. *Ensis*, *Schum.* 1817. *Ensatella*, *Swains.* 1840. *Hypogæa*, sp. *Poli.* *Sol. Ensis*.
607. *Pharus*, *Leach*, 1817. *Solecurtus* c , *Blainv.* *Solecurtoides*, *Desmoul.* *Psammobia*, sp. *Turton*, 1822. *Hypogæa*, sp. *Poli.* *Sol. legumen*.
608. *Macha*, *Oken*, 1815. *Solecurtus*, *Desh.* *Solecurtus* β , *Blainv.* 1825. *Chama golar*, *Adans.* *Hypogæa* and *Hypogæoderma*, sp. *Poli.* *Psammobia*, sp. *Turton.* *Solen strigillatus*.
Solen α , *Blainv.* *Sol. cultellus*.
Psammobia, sp. *Turton*, 1822. *Psam. scopulosa*.
609. *Azor*, *Leach MSS.* 1819. *Psammobia*, sp. *Turton.* *Solen antiquatus*.
610. *Sanguinolaria*, *Lam.* 1801; *Sow.* *Lobaria*, *Schum.* 1817; not *Müller.* *Aulus*, *Oken*, 1817. *Soletellina*, *Desm.* 1832. *Psammobia*, sp. *Desh.* *Tellina* and *Solen*, sp. *Gmelin.* *Tellina rosea*.
Sanguinolaria, sp. *Lam.* 1818. *Sol. occidens*.
Psammobia, sp. *Lam.* 1818. *Psam. violacea*.
Psammotea, sp. *Lam.* 1818. *Psammobia*, sp. *Sow.* *Psam. serotina*.
611. *Tagelus*. *Siliquaria*, *Schum.* 1817; not *Brug.* 1789, nor *Lam.* 1801. *Solen (tagel)*, *Adans.* 1757. *Solecurtus*, sp. *D'Orb.* *Sol. guinensis*.
Novaculina, *Benson*, 1830. *Solecurtus*, sp. *D'Orb.* *N. gangeticus*.
612. *Siliqua*, *Megerle*, 1811. *Leguminaria*, *Schum.* 1817. *Solecurtus*, *Blainv.*; not *Desh.* *Solecurtoides*, sp. *Desmoul.* *Solenocurtis*, *Swains.* 1840. *Machæra*, *Gould.* *Solen*, sp. *Gmelin*, *Say.* *Solen radiatus*.
613. *Cultellus*, *Schum.* 1817; *Desmoul.* 1832. *Solen lacteus*.
614. *Soletellina*, *Blainv.* 1825; *Desmoul.* 1832. *Sanguinolaria*, sp. *Sow.* *Psammobia*, sp. *Desh.* *Solen*, sp. *Chemn.*; *Lam.* 1818. *Solen Diphos*.
615. *Glycimeris*, *Lam.* 1799; not 1801 nor 1812. *Panopea*, *Menard*,

- 1807; *Lam.* 1812. *Ponopia*, *Swains.* 1840. *Chama Glycimeris*, *Aldrov.* *Mya Glycimeris*.
Glycimeris, *Lam.* 1812. *Gl. arctica*.
Pholadomya, sp. *Conrad.* *Ph. abrupta*.
 616. *Cyrtodaria*, *Daud.* 1799; *Oken*, 1815. *Glycimeris*, *Lam.* 1801 & 1812; not 1799, nor *Schum.* 1817. *Mya Siliqua*.

Fam. IV. NUCULIDÆ.

617. *Nucula*, *Lam.* 1801. *Polydonta*, *Megerle*, 1811. *Glycimeris*, sp. *DaCosta*. *Tellina* and *Donax*, sp. *Gmelin.* *Arca*, sp. *Linn.* *Arca Nucleus*.
 618. *Nuculina*, *D'Orb.* 1845. *Nucula*, sp. *Desh.* *Nuc. miliaris*.
 619. *Leda*, *Schum.* 1817; *Lovèn*, 1846. *Lembulus*, *Leach MSS.* 1819. *Nucula*, sp. *Lam.* *Arca pella*.
Lembulus, sp. *Risso*, 1826. *L. Roissianus*.
 620. *Yoldia*, *Moller*, 184 ? *Moldia*, *Gray* (misprint), 1847. *Arca* — ?
Nucula, sp. *Moller.* *Yoldia*, sp. *Lovèn*, 1846. *N. lenticula*.
 — — ?
 621. *Solenella*, *Sow.* 1832. *Malletia*, *Desmoulin*, 1832. *Ctenoconcha*, *Gray*, 1840. *S. Norrisii*.

Fam. V. MYADÆ.

622. *Mya*, *Linn.*; *Lam.* 1801; *Schum.* 1817. *M. truncata*.
Mya, *Megerle*, 1811. *Mya* β , *Blainv.* *Sphænia*, sp. *Turton*, 1822, jun. *M. arenaria*.
 623. *Platyodon*, *Conrad*, 1817. *Mya cancellata*.
 624. *Sphenia*, sp. *Leach MSS.* 1819; *Turton*, 1822. *Sphæna*, *Swains.* 1840. *Sp. Binghami*.
 ? *Arcinella*, *Philippi*, 1844; not *Oken* nor *Schum.* *Arc. lævis*.
 625. *Tugonia*, *Gray*, 1840. *Pholas* (*Tugon*), *Adans.* 1757. *Mya*, sp. *Gmelin*, *Basterot.* *Anatina*, sp. *Lam.* 1812. *Mya Anatina*.

Fam. VI. ANATINIDÆ.

626. *Laternula*, *Bolten*, 1798. *Auriscalpium*, *Megerle*, 1811; *Schum.* 1817. *Anatina*, sp. *Lam.* 1812. *Solen anatinus*.
Anatina, *Blainv.* 1825. *An. subrostrata*.
Auriscalpium β , *Schum.* 1817. *A. globulosum*.
 627. *Periploma*, *Schum.* 1817. *Osteodesma* α , *Blainv.*; not *Desh.* *Anatina*, sp. *Lam.* 1812. *Corbula*, sp. *Brug.* *P. inæqualvis*.
 628. *Cochlodesma*, *Couthouy*, 1839. *Bontia*, *Leach MSS.* 1819;

- Brown*, 1844. *Ligula*, sp. *Montag.* 1800 (*Soland. MSS.* ?) ; not *Humph.* 1797. *Anatina*, sp. *Turton, Conrad.* *Mya*, sp. *Montag.* Spoonhinge, *Petiver.* *Mya prætenuis.*
629. *Cardilia*, *Desh.* 1835. *Hemicyclonosta*, *Desh.* 1837 ; *Michelin*, 1837 (*Hemicyclostoma*, *Gray*, and *Hemicyclostera*, *Brown*, errors of press). *Isocardia*, sp. *Lam.* I. — ?
630. *Rupicola*, *Bellev.* ; *Lam.* 1812. *Osteodesma* β , *Blainv.* 1825. *Anatina c*, *Schum.* 1817. *Thracia*, sp. *Brown*, 1827. *Ligula*, sp. *Montag.* *Mya distorta.*
631. *Thracia*, *Leach MSS.* 1819 ; *Desh.* 1835. *Odoncincta*, *Costa*, 1827. *Odontocincta*, *Agassiz.* *Odoncyneta*, *Cantr.* *Cinetodonta*, *Herrm.* 1847. *Osteodesma*, sp. *Blainv.* 1825. *Tellina*, sp. *Poli.* *Amphidesma*, sp. *Lam.* 1812. *Anatina*, sp. *Lam., Turton.* *Ligula*, sp. *Montag.* 1808 ; not *Humph.* 1797. *Mya pubescens.*
- Thracia*, *Blainv.* 1825. *Th. Corbuloides.*
- Thracia*, *Conrad.* *Th. rugosa.*
632. *Magdala*, *Leach MSS.* 1819 ; *Brown*, 1827. *Hiatella*, *Brown*, 1827 ; not *Daud.* *Myatella*, *Brown*, 1833 & 1844. *Lyonsia*, *Turton*, 1822. *Mya*, sp. *Chemn.* *Amphidesma*, sp. *Lam.* *Anatina*, sp. *Sow.* *Pandora* ? sp. *Philippi*, 1838. *Osteodesma*, sp. *Desh.* 1835 ; not *Blainv.* *Tetragonostea*, *Desh.* 1835. *Mya norvegica.*
- Pandorina*, *Scacchi*, 1836. *Tellina*, sp. *Scacchi*, 1833. *Pand. coruscans.*
- Anatina*, sp. *Gray.* *Anat. cuneata.*
- Osteodesma*, sp. *Couthouy.* *Ost. hyalina.*
633. *Myodora*, *Gray*, 1840. *Myadora*, "Gray," *Reeve.* *Anatina*, sp. *Stutch.* *Anat. brevis.*
634. *Camostrea*, *Roissy*, 18 ? ; *Blainv.* 1825. *Cleidothærus*, *Stutch.* 1835. *Chama c*, *Blainv.* 1825. *Ch. hemicardium.*
635. *Myochama*, *Stutch.* 1835 ; *Sow.* *Myo. anomioides.*
636. ? *Poromya*, *Forbes*, 1843. *Por. anatinoides.*

Fam. VII. CORBULIDÆ.

637. *Corbula*, *Brug.* 1792 ; *Lam.* 1811. *Aloidis*, *Megerle*, 1811. *Corb. sulcata.*
- Agina*, *Turt.* 1822. *Tellina*, sp. *Olivi.* *Corbula*, sp. *Brug.* *Mya inæquivalvis.*
- Lentidium*, *Christ. & Jans.* *Corb. mediterranea.*
- Erycina*, sp. *Lam.* *Eryc. trigona.*
638. *Azara*, *D'Orb.* 1839. *Potamomya*, *Hinds*, 1843 ; not *J. Sow.* *Mya labiata.*
639. *Erodina*, *Daud.* 17 ? ; *Bosc.* *Corbula*, sp. *Desh.* *Pacyodon*, *Beck MSS.* *Mya*, sp. *Lam.* *Mya Erodina.*
- ? *Tellina*, sp. *Chemn.* *Tel. guianaca.*

640. Harlea, *Gray*, 1844, 78. Corbula, n. s.
 641. Tomala, *Gray*, 1844, 78. Corbula, n. s.
 642. Raleta, *Gray*, 1844, 78. Corbula, n. s.
 643. Neara, *Gray*, 1830. Anatina, sp. *Lam.* Mya rostrata.
 Erycina cuspidata, *Risso*, 1826; not *Lam.* Tellina, sp. *Olivi.* Cor-
 bula, *Brown.* Cuspidaria, *Nardo.* Thracia, sp. *Brown.* N.
 brevirostris.

Fam. VIII. PANDORIDÆ.

644. Pandora, *Soland.*; *Brug.* 1792; *Lam.* 1801; *Schum.* 1817;
 not *Megerle*, 1811. Placuna, sp. *Humph.* Hypogæa, sp. *Poli.*
 Tellina inæquivalvis.

Fam. IX. SOLENOMYADÆ.

645. Solemya, *Lam.* 1818; *Blainv.* 1825. Solenomya, *Menke*, 1830.
 Solenymia, *Swains.* 1840. Solenimya, *Bowdich*, *Sow.* S. me-
 diterranea.

Fam. X. GALEOMMIDÆ.

646. Galeomma, *Turton*, 1825; *Philippi.* Hiatella, *Costa*; *Chiaje*;
 not *Daud.* Parthenope, *Scacchi*, 1836; not *Fab.* Gal. Tur-
 tonii.
 Psammobia, sp. *Lam.* 1818. Ps. aurantia.
 Psammobia, sp. *Quoy & Gaim.* Ps. vitrea.

Fam. XI. LASIADÆ.

647. Lasea, *Leach MSS.* 1819; *Brown*, 1827. Kellia, sp. *Turton*,
 1822. Bornia, sp. *Philippi*, 1836. Erycina, sp. *Scacchi.* Am-
 phidesma, sp. *Lam.* 1818. Petricola, sp. *Gray*, 1825. Poronia,
 sp. *Thorpe.* Cardium rubrum.
 Cycladina, *Cantraine*, 1830. Poronia, *Recluz*, 1846. Chama
 (poron), *Adanson.* Tellina *Adansonii.*
 648. Kellia, sp. *Turt.* 1822. Bornia, sp. *Philippi*, 1836. Amphi-
 desma, sp. *Lam.* 1818. Erycina, sp. *Payr.* 1826; *Recluz.*
 Chironia, *Desh.* 184 ? Petricola, sp. *Gray*, 1828. Tellimya,
 sp. *Brown.* Mya suborbicularis.
 649. Cyamium, *Philippi*, 1845. Cy. antarcticum.
 Cyamium, *Lovèn*, 1846. Lesæa, sp. *Moller.* Montacuta, sp. *Bean.*
 Erycina, sp. *Recluz.* Venus, sp. *O. Fab.* Solen, sp. *Flem.*
 Saxicava, sp. *Brown.* Mya purpurea.
 650. Montacuta, (sp.) *Turt.* 1822; *Lovèn*, 1846. Tellimya, sp.
Brown. Ligula, sp. *Montag.* Mya substriata.
 Petricola, sp. *Gray*, 1825. Mya bidentata.
 Tellimya, sp. *Brown*, 1827. Montacuta, sp. *Turt.* 1822. Poronia,
 sp. *Jeffreys.* Mya ferruginea.

651. *Clausina*, *Jeffreys*, 1847 ; not *Brown*. *Kellia*, sp. *Forbes*, 1843. *Artemis*, sp. *Jeffreys*. *Cryptodon*, sp. *Alder*. *Cl. ferruginosa*.
 652. *Embla*, *Lovèn*, 1846. *E. Koreni*.

Fam. XII. LEPTONIDÆ.

653. *Lepton*, *Turton*, 1822. *Mactra*, sp. *Montag*. *Mactra squamosa*.

Fam. XIII. SAXICAVIDÆ.

654. *Saxicava*, *Bellev*. 1802. *Saxicave*, *Lam*. 1812. *Glycimeris*, *Schum*. 1817 ; not *Lam*. 1799 nor 1801. *Byssomya*, *Cuv*. 1817. *Byssonia*, *Blainv*. 1825. *Byssomia*, *Desh*. *Pholeobia*, *Leach*, 1819. ? *Clotho*, *Faujas*. *Hypogæa*, sp. *Poli*, 1791. *Mytilus*, sp. *Linn*., *Montag*. *Mya*, sp. *Fab*., *Müller*. *Mytilus rugosus*.
 655. *Hiatella*, *Daud*. ; *Bosc*, 1802. *Diodonta*, *Schum*. 1817. *Rhomboides*, *Blainv*. 1825. *Biapholus*, *Leach*, 1819 ; *Blainv*. *Cardita*, sp. *Brug*. *Donax*, sp. *Poli*. *Corbula*, sp. *Blainv*. *Saxicava*, sp. *Blainv*. *Hyatella*, *D'Orb*. *Mya*, sp. *Brocchi*. *Solen*, sp. *Linn*. *Solen minutus*.
 656. ? *Entodesma*, *Philippi*, 1845. *E. chilensis*.

Order III. GONIOPODA.

Fam. I. CHAMIDÆ.

657. *Chama*, *Linn*. ; *Lam*. 1801. *Jataronus*, *Adans*. 1757. *Macrophyllum*, *Gevers*, 1766. *Psilopus*, sp. *Poli*, 1791 ; *Oken*, 1815. *Licina*, sp. *Humph*. 1797. *Gryphus*, *Humph*. MSS. 1797. *Lazarus*, *Cuv*. 1800. *Cham. Lazarus*.
 ? *Diceras*, *Lam*. (internal cast). *D. arietina*.
 658. *Arcinella*, *Schum*. 1817 ; not *Philippi*. *Licina*, sp. *Humph*. 1797. *Gryphus*, *Humph*. MSS. 1797. *Chama* β, *Blainv*. 1825. *Ch. Arcinella*.

Fam. II. ETHERIADÆ.

659. *Etheria*, *Lam*. 1808 ; *Blainv*. 1825 ; not *Raf*. *Ætheria*, *Menke*, 1830 ; *Koenig*. *Etherea*, *Schw*. *E. semilunata*.
 660. ? *Mulleria*, *Férus*. 1823 ; *Sow*. *Etheria plumbea* (jun.), *Desh*. *M. lobata*.

Fam. III. CARDITIDÆ.

661. *Venericardia*, *Lam*. 1801. *Cardita c*, *Blainv*. *Cardita*, sp. *Desh*. *Cardissa*, *Oken*, 1815. *V. imbricata*.
 662. *Cardita*, *Brug*. 1789 ; *Lam*. 1801. *Cardita* β, *Schum*. 1817.

- Chama, sp. *Linn.* Trapezium, sp. *Humph.* 1797. Chama calyculata.
- Cardita α , *Schum.* 1817. Venericardia, sp. *Payr.* Limnea, sp. *Poli*; not *Lamk.* Chama antiquata.
- Agaria, *Gray*, 1840. Cardito-cardite, *Blainv.* Cardita, sp. *Lam.* Chama Agar.
- Glans, *Megerle*, 1811. Card. trapezia.
663. Mytilicardia, *Blainv.* 1825. Mytilicardita, *Anton.* Cardita, sp. *Lam.* Jesonia, *Gray*, 1840. Chama Jeson.
664. Trapezium, *Megerle*, 1811. Trapezium, sp. *Humph.* 1797. Cypricardia, sp. *Lam.* Cyp. angulata.
665. Libitina, *Schum.* 1817. Cypricardia, *Lam.* 1818. Cardita, sp. *Brug.* Cardita D, *Blainv.* Cham. guinaica.
666. Coralliophaga, *Blainv.* 1825. Cardita, sp. *Brug.* Cypricardia, sp. *Lam.*; *Risso.* Chama Coralliophaga.
667. Byssomya, *Payr.* 1826; not *Cuv.* 1817. Saxicava, sp. *Desh.* Bys. Guerini.
668. ? Opis, *Defrance*, 1825. Trigonia c, *Blainv.* Ophis, *Gray*, 1840. O. cardissoides.
669. ? Myoconcha, *J. Sow.*; *Blainv.*
670. ? Hippopodium, *Conybeare*; *J. Sow.* 1819.

Fam. IV. PHOLADOMYADÆ.

671. Pholadomya, *Sow.*, *Desh.* Ph. candida.
Cardita, *J. Sow.* Ph. producta.
Mya, *J. Sow.* Ph. angulifera.

Fam. V. ASTARTIDÆ.

672. Astarte, *J. Sow.* 1816. Crassina, *Lam.* 1818. Venus, sp. *Montag.*, *Blainv.* A. Damnoniensis.
Goodallia, *Turton*, 1822. Mactrina, *Brown*, 1827. Mactra, sp. *Montag.* Mactra triangularis.
Nicania, *Leach*, 1819. Venus Q, *Blainv.* 1825. N. Banksii.
Cypricardia, sp. *Lam.* 1819. C. Modiolaris.
Tellina, sp. *Poli.* Tel. fusca.
673. ? Cardinia, *Agassiz*, 1846; not *Agassiz*, 1841.
674. Megalodon, *J. Sow.*; not *Agassiz.* Megalodus, *Goldf.*

Fam. VI. CRASSATELLIDÆ.

675. Crassatella, *Lam.* 1801, 1818. Venus, sp. *Gmelin.* Mactra β , *Schum.* 1817. Ven. ponderosa.
Paphia, sp. *Lam.* 1801. Crassatella, sp. *Lam.* 1818. Ven. contraria.

Crassatella, Sow. C. Kingicola.
? *Ptychomya*, Agassiz.

Fam. VII. GLOSSIDÆ.

676. *Glossus*, *Poli*, 1795; *Oken*, 1815. *Trapezium*, sp. *Humph.* 1797.
Bucardium, *Megerle*, 1811; *Schum.* 1817. *Bucardia*, *Lister*.
Isocardia, *Lam.* 1799, 1801, 1818; not *Klein*. *Isocardium*,
Blainv. 1825; *Risso*, 1826. *Chama*, sp. *Linn.* *Cardita*, sp.
Brug. 1792. *Cardium*, sp. *Bolten*. *Chama* Cor.
Isocardia, sp. *Lam.* Ch. *Molkiana*.

Fam. VIII. LUCINIDÆ.

677. *Lucina*, *Brug.* 1792; *Lam.* 1801. *Venus*, sp. *Gmel.* *Phacoides*,
Blainv. 1825. Ven. *jamaicensis*.
Lucina, *Schum.* 1817. V. *pennsylvanica*.
Triodonta, *Schum.* 1817. *Astarte*, sp. *Gray*, 1825. *Venus*, sp.
Chemn. Ven. *borealis*.
Thiatira, sp. *Leach*, 1819. *Tellina*, sp. *Mont.* Ven. *spuria*.
Strigella, sp. *Turton*, 1822. Tel. *divaricata*.
Cyrachæa, *Leach* MSS. 1819. *Myrtea*, *Turt.* 1822. *Ortygia*, sp.
Brown, 1827. *Venus*, sp. *Montag.* *Lucina*, sp. *Philippi*. *Venus*
spinifera.
678. *Mysia*, *Leach* MSS. 1819; *T. Brown*, 1827. *Diplodonta*, sp.
Philippi, 1836. *Psammobia*, sp. *Flem.* *Lucina*, sp. *Turt.* 1822;
Lam. *Tellina*, sp. *Montag.* Tel. *rotundata*.
Diplodonta, *Bronn*, 1831. *Venus* *Lupinus*.
679. *Cyrenoida*, *Joannis*, 1835. *Cyrenella*, *Desh.* 1835. *Cyrenoides*,
G. B. Sow. 1842. Cyr. *Dupontia*.
680. *Thyasira*, *Leach* MSS. 1817; fide *Lam.* 1818. *Thyatira*, *Leach*
MSS. 1819; fide *Jeffreys*. *Thiatisa*, sp. *Leach* Cat. 1819.
Bequania, *Leach*; fide *Brown*. *Cryptodon*, *Turton*, 1822. *Pty-*
china, *Philippi*, 1836. *Axinus*, "Sow."; *Lovèn*, 1846. *Tel-*
lina, sp. *Montag.* *Lucina*, sp. *Lam.* 1818. *Amphidesma*, sp.
Lam. 1818. *Tellina* *flexuosa*.
681. *Fimbria*, *Megerle*, 1811. *Idothea*, *Schum.* 1817. *Corbis*, *Cu-*
vier, 1817. *Idotæa*, *Desh.* *Lucina* E, *Blainv.* 1825. *Lu-*
cina, sp. *Brug.* *Trapezium*, sp. *Humph.* *Venus* *fimbriata*.
682. *Loripes* (or *Loripoderma*), *Poli*, 1792. *Ligula*, *Menke*, 1830;
not *Montag.* *Tellina* a, *Megerle*, 1811. *Amphidesma*, sp. *Lam.*
1818. *Lucina*, sp. *Lam.* 1818. *Thiatisa*, sp. *Leach*, 1819.
Venus *lactea*.
? *Taras*, *Risso*, 1826. T. *antiquatus*.
Ungulina, *Daud.*, *Roissy*, *Lam.* 1812. U. *oblonga*.
683. ? *Scacchia*, *Philippi*, 1844. *Loripes*, *Scacchi*. *Lucina*, sp. *Phi-*
lippi. E. *elliptica*.

684. *Codakia*, *Scopoli*, 1777. *Chama codok*, *Adans.* 1757. *Ch. codok*.

Lenticularia, *Schum.* 1817. *Ven. punctata*.

Orbiculus β , *Megerle*, 1811. *Cytherea*, sp. *Lamk.* *Lucina*, sp. *Sow.* *Venus tigrinus*.

Fam. IX. UNIONIDÆ.

685. *Anodonta*, *Cuvier*, 1798; *Lam.* 1801. *Anodon*, *Oken*, 1815. *Lymnea* and *Lymnoderma*, sp. *Poli*, 1795; not *Lam.* *Mytilus*, sp. *Linn.* *Mytilus* α , *Schum.* 1817. *Glochidium*, *Rathke* (very young). *Myt. anatinus*.

Strophilus, *Rafinesq.*

Lostena, *Rafinesq.*

Patularia, *Swains.* 1840. *A. ovata*.

686. *Margaritana*, *Schum.* 1817. *Baphia*, *Gevers*, 1787. *Damalis*, *Leach*, 1819. *Unio*, *Turt.* 1822. *Mya*, sp. *Linn.* *Unio*, sp. *Lam.* 1818. *Mya margaritifera*.

Unio, *Lam.* 1810. *Unio littoralis*.

Potamida, *Swains.* 1840. "*Damalis*, *Leach.*" *Unio sinuata*.

Complanaria, *Swains.* 1840. *C. gigas*.

Uniopsis, *Swains.* 1840. *U. mytiloides*.

Alasmodonta, *Say*; *Swains.* 1840. *Alasmodonta*, *Say.* *Alasmodon*, *Sow.* *Alasmesodonta*, *Blainv.* 1825. *Monodonta*, *Say*, 1817; not *Lamk.* *A. undulatus*.

Symphonota, sp. *Lea.* *Lymnæa*, *Swains.* 1840. *L. alata*.

687. *Monocondylea*, *D'Orb.* 1835. *Monocondyla*, *Gray*, 1840. *M. paraguayana*.

688. *Unio*, *Retzius*, 1788; *Schum.* 1817; not *Lamk.* 1801. *Mya*, *Humph.* 1797. *Baphia*, sp. *Gevers*, 1787. *Mysia*, *Turton*, 1822; *Swains.* 1840. *Lymnea*, sp. *Poli*, 1795. *Lymneum*, *Oken*, 1815. *Luticola*, *Goldf.* 18 ? *Mya pictorum*.

Unio, *Swains.* 1840. *U. mytiloides*.

Curricula, *Swains.* 1840. *U. planulata*.

Ligumia, *Swains.* 1840. *U. recta*.

Theliderma, *Swains.* 1840. *U. metanera*.

Megadomus, *Swains.* 1840. *U. gigas*.

Aglia, *Swains.* 1840. *U. ovata*.

Calceola, *Swains.* 1840. *U. calceolus*.

Hemiodon, *Swains.* 1840. *U. undulatus*.

Naidea, *Swains.* 1840. *Niaa*, *Swains.* 1837. *U. ater*.

Canthyria, *Swains.* 1840. *U. spinosus*.

Iridea, *Swains.* 1840. *U. granosus*.

Naia, *Swains.* 1840. *U. corrugata*.

Hyridella, *Swains.* 1840. *U. australis*.

689. *Barbala*, *Humph.* 1797; *Gray*, 1828. *Barbata*, *Sow.* *Dipsas*, *Leach*, 1817. *Cristaria*, *Schum.* 1817. *Symphynota*, *Swains.* 1840. *Symphonota*, sp. *Lea.* *Dipsus*, *Swains.* 1840. *Appius*, *Leach MSS. B.M.* *Mytilus*, sp. *Solander.* *Mytilus plicatus*.

690. *Lamproscapha*, *Swains.* 1840. *Anodon*, sp. *Spix.* *Anodonta*, sp. *D'Orb.* *A. ensiformis.*
 691. *Anodonta*, sp. *Lam.* 1819. *Anodon*, sp. *Spix.* *A. exotica.*
 692. ? *Byssodonta*, *D'Orb.* 1835 ? 184 ? *B. paranensis.*

Fam. X. MUTELADÆ.

693. *Mutela*, *Scopoli*, 1777. *Chama* (*Mutel*), *Adans.* 1757. *Scapha*, *Humph.* 1797. *Anadontites*, *Brug.* *Iridina*, *Lamk.* 1818; *Blainv.* 1825; *Swains.* "Berpolis, *Leach*," *Blainv.* *Mytilus* *dubius.*
Anodonta, sp. *Lamk.* *Symphynota*, sp. *Swains.* *Iridina*, sp. *Desh.* *Anod. rubens.*
 694. *Leila*, *Gray*, 1840. *Anodonta*, *Jans.* *Iridina*, sp. *D'Orb.* *Anodon*, sp. *Lea.* *Anod. esula.*
 695. *Pleiodon*, *Conrad*, 1834. *Iridina*, sp. *Swains.* *Irid. ovata.*
 696. *Paxyodon*, *Schum.* 1817. *Hyria*, sp. *Lam.* 1819. *Unio a*, *Blainv.* 1825. *H. corrugata.*
Prisodon α, *Schum.* 1817. *Hyria*, sp. *Lamk.* *Tellina*, sp. *Gmelin.* *Tellina alata.*
 697. *Prisodon β*, *Schum.* 1817. *Castalia*, *Lamk.* 1819. *Tetraplodon*, *Spix.* *Unio c*, *Blainv.* *Cast. ambigua.*

Fam. XI. MYCETOPODIDÆ.

698. *Mycetopus*, *D'Orb.* 1835. *Mycetopoda* or *Mycetopus*, *Sow.*, *Swains.* 1840. *M. soleniformis.*
Anodon, sp. *Spix*, 1827. *M. siliquosus.*

Fam. XII. TRIGONIADÆ.

699. *Trigonia*, *Lam.* 1801. *Tr. nodulosa.*
Trigonia β, *Blainv.* *Trigonia*, sp. *Lam.* 1818. *Tr. pectinata.*

Fam. XIII. ARCADÆ.

700. *Arca*, *Linn.*; *Lam.* 1801. *Arca a*, *D'Orb.* *Navicula*, *Blainv.* 1818. *Byssarca*, *Swains.* 1835 & 1840. *Daphne* and *Daphnoderma*, sp. *Poli*, 1795. *Pectunculus* (*mesol*), *Adans.* 1757. *Cyphoxis*, *Rafin.* *Arca Noë.*
Litharca, *Gray*, 1844. *Arca Lithodomus.*
 701. *Trisis*, *Oken*, 1815; *Alton*, 1829. *Arca*, sp. *Linn.* & *Lamk.* *A. tortuosa.*
 702. *Barbatia*, *Gray*, 1840, 1844, 81. *Arca*, sp. *Linn.* & *Lamk.* *A. barbata.*
 703. *Scaphula*, *Benson*, 1835; not *Swainson.* *Scaphura*, *Gray*, 1840. *S. — ?*

704. *Senilia*, *Gray*, 1840, 1844, 51. *Arca*, *Swains*. 1840. *Arca* 1 *d*, *Alton*. *Pectunculus* (*Tagan*), *Adans*. 1757. *A. senilis*.
705. *Argina*, *Gray*, 1840, 1844, 81. *Arca*, n. s.
706. *Lunaria*, *Gray*, 1840, 1844, 82. *Arca*, n. s.
707. *Anadara*. *Arca*, sp. *Linn.*, *Lamk.*, *Swains*. *Pectunculus* *Anadara*, *Adans*. 1757. *Arca rhomboides*, *Blainv*. *Arca antiquata*.
708. *Scapharea*. *Arca*, sp. *Brug.*, *Lam*. *Arca inæqualvis*.
709. *Cucullæa*, *Lam*. 1801. *Arca* β , *D'Orb*. *Arca cucullus*.
? *Arca*, sp. *Philippi*. *Arca pectunculoides*.
710. *Axinea*, *Poli*, 1795. *Axinæa*, *Oken*, 1815. *Arca pilosa*.
Pectunculus, *Lam*. 1801. *Glycimeris*, *Humph*. 1797; *Solander*.
Arca Pectunculus.
Pectunculus, *Megerle*, 1811. *Arca Glycimeris*.
711. *Limopsis*, *Sassi*, 1827; *Cantraine*, 1835. *Arca*, sp. *Brocchi*.
Pectunculus, sp. *Philippi*. *Limnopsis*, *Gray*, 1840. *Crenella*,
Herrm. 1846; not *Brown*. *Arca aurita*.
712. ? *Trigonocelia*, *Nyst & Gal.*, *D'Orb*. *Trigonocælius*, *Bronn*.
Trigonocælia, *Nyst*.
713. ? *Cannabina*, *Gray*, 1840.

Order IV. POGONOPODA.

Fam. I. TRIDACNIDÆ.

714. *Hippopus*, *Martini*, 1773. *Tridacna*, sp. *Brug*. 1792. *Tridachna*, sp. *Humph*. 1797. *Tridacna*, *Lam*. 1801; *Schum*. 1817.
Hippopodes, *Gevers*, 1787. *Chama gigas*.
715. *Tridacna*, sp. *Brug*. 1792. *Tridachna*, sp. *Humph*. 1797. *Hippopus*, *Lam*. 1799, 1801; *Schum*. 1817; not *Martini*, 1773.
Pelvis, *Megerle*, 1811. *Chama Hippopus*.

Fam. II. MYTILIDÆ.

716. *Mytilus*, *Linn.*; *Lam*. 1801. *Perna dotel*, *Adans*. 1757.
Perna, *Retz*. 1788; *Schum*. 1817. *Callitriche* and *Callitrichoderma*, sp. *Poli*, 1795. *Mytulus*, *Retz*. 1788. *Mytuli*, *Gevers*, 1787. *Myt. edulis*.
Mytilus, *Swains*. 1840. *M. achatinus*.
717. *Volsella*, *Scopoli*, 1777. *Modiola*, *Lam*. 1801. *Modiolus*, *Risso*, 1826; *Forbes*. *Mytilus* β , *Schum*. 1817. *Mytilus* α , *Blainv*.
Callitriche and *Callitrichoderma*, sp. *Poli*. *Tamarindiformes*, *Gevers*, 1787. *Mytilus Modiolus*.
Perna lutat, *Adans*. 1757. *M. — ?*
Amydalum, *Megerle*, 1811. *Myt. arborescens*.

718. *Lithophagus*, *Megerle*, 1811. *Lithodomus*, *Cuv.* 1817; *Risso*, 1826. *Perna*, *Oken*, 1815. *Mytilus* γ , *Schum.* 1817. *Modiola*, sp. *Lam.* *Pholas* (rapan), *Adans.* 1757. *Tamarindiformis* α , *Gevers*, 1778. *Callitriche* and *Callitrichoderma*, -*Poli*, 1795. *M. Lithophagus*.
719. *Brachydontes*, *Swains.* 1840. *Arca*, sp. *Linn.* *Mytilus*, sp. *Schroet.* *Modiola*, sp. *Lam.* *Mytilus exustus*.
720. *Crenella*, *Brown*, 1827. *Mytilus crenatus*.
Pectunculina, *D'Orb.* 1844. *P.* — ?
- Herrmannsen (i. 320) erroneously unites this genus with *Limopsis*.
721. *Lanistina*. *Modiola*, sp. *Lam.* *Lanistes*, *Swains.* 1840; not *Montf.* *Modiolaria*, "*Beck*"; *Lovén*, 1846. *Mytilus discors*.
722. *Modiolarca*, *Gray*, 1840. *Modiola*, sp. *Lam.* *Modiolaria*, "*Beck*." *Modiola trapezina*.

Fam. III. PINNIDÆ.

723. *Pinna*, *Linn.*; *Lam.* 1801. *Chimæra*, *Poli*, 1792. *Mya*, *Scopoli*, 1777; not *Linn.* *Pinna rudis*.
Pinna, *Swains.* 1840. *P. serrata*.
Perna (apan), *Adans.* 1757.
724. *Atrina*, *Gray*, 1840, 1844. *P. nigra*.

Fam. IV. DREISSENIDÆ.

725. *Dreissena*, *Van Beneden*, 1835. *Dreissena*, *Bronn.* *Mytilina* or *Mytulina*, *Cantraine*, 1835. *Trichogonia*, *Rossmüsler*, 1835. *Cœlogonia*, *Bronn.* *Mytilus*, sp. *Schroet.* *Mytilus* β , *Rang*; *Megerle*, 1811. *Dythalmia*, *Jay.* *Mytilus polymorpha*.
726. ? *Enocephalus*, *Munst.* 1833. *Ænocephalus*, *Herrmann*, 1846.
727. *Congerina*, *Partsch*, 1835. *Mytilomya*, *Cantraine*, 1837.
728. *Mytilimeria*, *Conrad*, 1837.
729. ? *Myoconcha*, *D'Orb.*

Fam. V. PTERIADÆ.

730. *Malleus*, *Lam.* 1799, 1801. *Ostrea e*, *Megerle*, 1811. *Ripariæ*, sp. *Gevers*, 1787. *Pintada*, sp. *Bolten*, 1798. *Margaritifera*, sp. *Humph.* 1797. *Tudes polonica*, *Klein.* *O. Malleus*.
731. *Baphia*, *Gevers*, 1787. *Vulsella*, *Humph.* 1797; *Lam.* 1799, 1801; *Schum.* 1817; not *Volsella*, *Scopoli*, 1777. *Reniella*, *Swains.* 1840, young. *Mya Vulsella*.
732. *Pteria*, *Scopoli*, 1777. *Avicula*, *Klein*, 1753; *Brug.* 1789; *Lam.* 1799, 1801. *Margaritifera*, sp. *Humph.* 1797. *Anonica*,

- * *Oken*, 1815. *Perna* (charon), *Adans.* 1757. *Ripariæ*, sp. *Gevers*, 1787. *Mytilus Hirundo*.
Perlamater β , *Schum.* 1817. *M. punctata*.
Avicula, *Swains.* 1840. *A. heterophylla*.
733. *Margaritiphora*, *Megerle*, 1811. *Meleagrina*, *Lam.* 1819. *Margarita*, *Leach*, 1814; not 1819. *Perlamater*, *Schum.* 1817. *Margaritifera*, *Humph.* 1797. *Ripariæ*, sp. *Gevers*, 1787. *Avicula a*, *Blainv.* 1825. *Pintada 1 a*, *Bolten*, 1798. *Myt. Margaritifera*.
734. *Crenatula*, *Lamk.* 1819. *Crenatule*, *Lam.* 1812. *Isogonum*, sp. *Bolten*, 1798. *Ostrea semiaurita*.
Crenatula, *Sow.* 1840. *Cren. mytiloides*.
735. *Dalacia*, *Gray*, 1825. *Vulsella*, sp. *Humph.* 1797. *Dal. folium*.
736. *Melina*, *Retz.* 1788; *Schum.* 1817. *Perna*, *Brug.* 1792; *Lam.* 1801; not *Retz.* *Sutura*, *Megerle*, 1811. *Isognomon*, *Klein*, 1753. *Isogonum*, sp. *Bolten*, 1798. *Hippochæta*, *Sangiov.* 1844. *Pedalion*, sp. *Soland.* *Ostrea ephippium*.
Pedalion, *Soland. MSS.* *Vulsella*, sp. *Humph.* 1797. *Ripariæ*, sp. *Gevers*, 1787. *Ost. Isognomon*.

Order V. MICROPODA.

Fam. I. PECTENIDÆ.

737. *Argus*, sp. *Poli*, 1795. *Pecten*, *Megerle*, 1811. *Ostrea*, sp. *Linn.* *Ost. opercularis*.
Pecten, *Schum.* 1817. *Ost. radula*.
Chlamys, sp. *Bolten.* 1798. *Pecten* β , *Schum.* *Ost. pallium*.
738. *Pecten*, *Bolten*, 1798; *Lam.* 1801. *Pandora*, *Megerle*, 1811; not *Brug.* nor *Lamk.* *Janira*, *Schum.* 1817; *D'Orb.* *Janera*, *Sow.* *Argus*, sp. *Poli.* *Ost. maximus*.
739. *Amusium*, *Megerle*, 1811. *Ost. magellanicus*.
Amusium, *Schum.* 1817. *Pallium B*, *Blainv.* *Ost. japonicum*.
Pleuronectia, *Swains.* 1840. *Ost. pleuronectes*.
740. *Pallium*, *Martini*, 1773; *Schum.* 1817. *Dentipecten*, *Rüppell*, 183 ? *Decadopecten*, "Rüppell;" *Swains.* 1840. *Pecten plica*.
741. *Neithea*, *Drouet*, 1824; *Blainv.* 1825. *Janira*, *D'Orb.* *Pecten quinquecostatus*.
742. *Lima*, *Brug.* 1797; *Lam.* 1801. *Glaucus* and *Glaucoderma*, sp. *Poli*, 1795. *Glaucion*, *Oken.* *Mantellum*, *Bolten*, 1798. *Pectunculus*, *Gualt.* *Ostrea Lima*.
743. *Limatula*, *S. Wood.* *Pecten*, sp. *Montag.* *Limula*, *D'Orb.* *Pect. subauricula*.

744. *Limæa*, *Bronn.* 1831. *Limoarca*, *Munster*, 1832. *Ostrea strigillata*.
Limæa, *Lovèn*, 1846. *Limæa Sarsii*.
 745. *Pedum*, *Brug.* 1797; *Lam.* 1801. *Pecten*, sp. *D'Orb.* 1846.
Glaucion β , *Oken*, 1815. *Ostrea spondyloidea*.

Fam. II. SPONDYLIDÆ.

746. *Spondylus*, *Linn.*; *Lam.* 1801. *Gasteropoda*, *Belon*, 1558.
Argus, sp. *Poli*, 1795. *Spond. gaderopus*.
 747. *Plicatula*, *Lam.* 1801. *Spondylus* β , *Schum.* 1817. *Spondylus*,
 sp. *Linn.*, *Brug.* *Sp. plicatus*.
 748. *Hinnites*, *DeFrance*, 1821. *Hinnus*, *S. Wood?* *Hynnites*,
Herrm. 1846. *Pecten*, sp. *D'Orb.* *H. Corteysii*.
Hinnita, *Gray*, 1826; *Conrad*, 1834. *Hinnites*, *Sow.* *Lima*, sp.
Gray, 1825. *Lima gigantea*.
Hinnites, *Sow.* *Pecten pusio*.

Fam. III. OSTREIDÆ.

749. *Ostrea*, *Linn.*; *Lam.* 1801; *Megerle*, 1811. *Peloris*, sp. *Poli*.
Ostreum, *Adans.* 1757. *Ost. edulis*.
Dendostrea, *Swains.* 1840. *Ostrea* β , *Megerle*, 1811. *Ostrea D*,
Blainv. *Ostreum*, sp. *Adans.* *Ost. folium*.
Mya, *Scopoli*, 1777. *Alectrionidæ*, *Fischer.* *Amphidonta*, *Fischer.*
Ost. cristagalli.
Peloris, sp. *Poli.* *Ost. Cochlearis*.
 750. *Gryphæa*, *Lam.* 1801; not *Gryphus*, *Humph.* *Ostrea*, sp.
D'Orb. *Ost. angulata*.
Gryphæa, *Swains.* *G. incurva*.
 751. *Exogyra*, *Say.* *Ostrea*, sp. *D'Orb.* *Chama*, sp. *Sow.* *E. — ?*
 752. *Plectronia*. *P. — ?*
 753. *Carolia*, *Cantraine*, 1835. *C. placunoides*.

Fam. IV. PLACENTADÆ.

754. *Placenta*, *Retz.* 1788; *Megerle*, 1811; *Schum.* 1817. *Placuna*,
Soland.; *Humph.* 1797; *Lam.* 1801. *Anomia*, sp. *Linn.* *An.*
Placenta.

Fam. V. ANOMIADÆ.

755. *Anomia*, *Linn.*; *Müller*, 1776; *Retz.* 1788; *Lam.* 1801; *Megerle*, 1811.
Echion, sp. *Poli.* *Fenestrella*, *Bolten*, 1798.
Lampades, sp. *Gevers*, 1787. *An. Ehippium*.
Cepa, *Humph.* 1797. *An. Cepa*.
 756. *Placunanomia*, *Brod.* 1832; *Sow.* *Anomia*, sp. *Blainv.* *Placunomia*,
D'Orb.; *Swains.* 1840. *P. Cumingii*.

757. *Pododesmus, Philippi*, 184 ? *Placunanomia*, sp. *Brod.*? P.
—?

Class III. BRACHIOPODA.

Fam. I. LINGULADÆ.

758. *Lingula, Haus.*; *Solander*; *Lam.* 1801; *Megerle*, 1811; *Schum.* 1817. *Ligula, Cuv.* 1797. *Patella*, sp. *Linn.* *Mytilus*, sp. *Dillw.* *Pat. unguis.*

Fam. II. CRANIADÆ.

759. *Crania, Retzius*, 1788; *Lam.* 1801, 1812; *Megerle*, 1811; *Schum.* 1817. *Criopus* and *Criopiderma, Poli*, 1795; *Flem.* *Orbicula, Lam.* 1801; *Schum.* 1817. *Discina, Turton*, 1825; not *Lam.* 1812. *Cryopus, Desh.* *Patella*, sp. *Fab.*, *Müller*, *Montag.* *Anomia*, sp. *Linn.*, *Chemn.* *Pat. anomala.*

Fam. III. DISCINIDÆ.

760. *Discina, Lam.* 1812; *Flem.* 1825. *Crania* β , *Schum.* 1817. *Orbicula*, sp. *G. B. Sow.*, *Owen*, not *Lam.* *Orbicula* β , *Blainv.* 1825. *D. ostreoides.*

Fam. IV. TEREBRATULIDÆ.

761. *Terebratula, Retz.* 1788; *Schum.* 1817. *Anomia* (animal), *Linn.* *Gryphus, Megerle*, 1811. *T. dorsata.*
Lampas, sp. *Humph.* 1797. *L. columbina.*
Lampades, Gevers, 1787. *L. Terebratula.*
762. *Lampas*, sp. *Humph.* 1797. *Terebratula*, sp. *Lam.* *Anomia*, sp. *Gmelin.* *Hypothyris*, sp. *Phillips*; *King*, 1846. *Atrypa*, sp. *Menke.* *L. Psittacea.*

See *King, Ann. & Mag. N.H.* xviii. 26, 1846, for fossil genera and their synonyma, which at least shows how imperfectly the distribution of the fossil species of this group is known.

Fam. V. THECIDEIDÆ.

763. *Thecidea, Defrance*; *Blainv.* 1825; *Risso*, 1826. *Th. mediterranea.*

Fam. VI. PRODUCTIDÆ.

764. *Productus, &c.*

Class IV. PTEROPODA.

Order I. THECOSOMATA.

Fam. I. CLEODORIDÆ.

765. *Cavolina*, *Gioeni*, 1783; *Abild.* 1791; not *Brug.* 1792. *Tricla*, *Retz.* 1788. *Anomia*, sp. *Forsk.* 1775. *Fissurella*, sp. *Brug.*; *Megerle*, 1811. *Rheda*, *Humph.* 1797. *Hyalea*, *Lam.* 1799, 1801. *Hyalus*, *Froriep*, *Meckel.* *Hyalæus*, *Montf.* 1810. *Hyalea*, *Schweiger*, *Herrm.* *Monoculus*, sp. *Linn.* *Cavol. natans.* *Hyalæa*, sp. *Peron & Lesueur.* *H. tæniobranchiata.*
- 766.? *Archonta*, *Montf.* 1810. *A. exploratus.*
767. *Diacria*, *Gray*, 1842. *Hyalea b*, *Rang.* *Hyalea trispinosa.*
768. *Clio*, *Brown*, 1756; not *O. Müller.* *Cleodora*, *Peron & Lesueur*; *Lam.* 1812. *Clidora*, *Schweig.* *Hyalæa*, sp. *D'Orb.* *Clio pyramidata.*
769. *Balantium*, *Leach MSS.* 1819; *Children*, 1829. *Bal. recurvum.*
770. *Pleuropus*, *Eschsch. (Isis)* 1825. *Cleodora*, *Blainv.* *P. pellucidus.*
771. *Vaginella*, *Daud.* *Vaginula*, *D'Orb., Sow.* *V. depressa.*
772. *Cresis* ("Le Creseis"), *Rang*, 1828, 1829. *Creseis*, *Eschsch.* 1829. *Criseis*, *Forbes*, 1844. *Crisia*, *Menke*, 1844. *Cleodora*, sp. *D'Orb.* *Hyalæa*, sp. *D'Orb.* *C. acus.* *Styliola*, "Lesueur;" *Blainv.* 1825. *Cleodora c*, *Blainv.* *S. recta.*
- 773.? *Psyche*, *Rang*, 1825, *Ann. Sc. N.* *Psy. globulosa.*
774. *Euribia*, *Rang*, 1827; not *Hubner*, &c. &c. *Eurybia*, *Menke*, 1830. *Eur. hemispherica.*
- 775.? *Cæcum*, *Flem.* 1824. *Brochus*, *Brown*, 1827. *Odontidium*, *Philippi*, 1836. *Cæcalium*, *Macgilliv.* 1843. *Orthoceras*, sp. *Flem.* *Dentalium*, sp. *Montag.* *Creseis*, sp. *Cantr.* *Odontina*, *Zhorz.* 1834. *Odontostoma*, *Cantr.* *Dentaliopsis*, *Clark MSS.* *Dent. trachea.*
- 776.? *Cadulus*, *Philippi*, 1844. *Dent. ovulum.*

Fam. II. LIMACINIDÆ.

777. *Limacina*, *Cuv.* 1817; not *Hartm.* 1821. *Spiratella*, *Blainv.* 1825. *Argonauta*, sp. *O. Fab.* *Lim. arctica.*
- 778.? *Spirialis*, *Eyd. & Soul.* See *Heterofusus*?
- 779.? *Cirropteron*, *Sars*, 1835. *Buccinum* (jun.), *Allman*, 1843. *C. semilunare.*

Fam. III. CUVIERIDÆ.

780. *Cuvieria*, *Rang*, 1827; not *Peron*, &c. *Cleodora*, sp. *Quoy & Gaim.* *Creseis*, sp. *Rang.* *Cuv. columnella*.
 781. *Triptera*, *Quoy & Gaim.* 1825. *Tripter*, *Rang.* *T. rosea*.

Fam. IV. CYMBULIADÆ.

782. *Cymbulia*, *Peron & Lesueur*, 1810; *Lam.* 1812. *Cym. proboscidea*.
 "Argivora, *Lesueur*;" *Blainv.* 1825. *Cymbulia parva*.
 783. *Tiedemannia*, *Chioje*, 1841; *Krohn*, 1844. *Cymbulia*, sp. *Beneden.* *T. neapolitana*.

Order II. GYMNOSOMATA.

Fam. V. PNEUMODERMIDÆ.

784. *Pneumoderma*, *Peron & Lesueur*, 1810. *Pneumodermon*, *Cuvier*, 1817. *Pneum. capuchonne*.
 785. *Spongiobranchea*, *D'Orb.* 1840? *Spong. australis*.
 786. *Trichocyclus*, *Eschsch. (Isis)* 1825. *T. Dumerillii*.
 787. ? *Pelagia*, *Quoy & Gaim.*; not *Peron*.

Fam. VI. CYMODOCEADÆ.

788. *Cymodocea*, *D'Orb.* 184?; not *Salisbury*. *Cyd. diaphana*.

Fam. VII. CLIONIDÆ.

789. *Clione*, *Pallas*, 1774. *Clio*, *O. Müller*, 1776; *Peron & Lesueur*, 1810; *Lam.* 1812; not *Brown*, 1756. *Clio. boreale*.
 790. *Cliodita*, *Quoy & Gaim.* 1825. *Clio. caduceus*.

Class V. CEPHALOPODA.

Subclass I. DIBRANCHIATA.

Order I. OCTOPODA.

Fam. I. OCTOPODIDÆ.

OCYTHOINA.

791. *Ocythoë*, *Rafin.*; *Leach*, 1818. *Argonauta*, *Risso*, 1826. *Octopus e*, *Blainv.* 1825. *O. antiquorum*.

OCTOPODINA.

792. Octopus, *Cuvier*, 1797, 1817; *Blainv.* 1825. Polypus, *Leach*.
Octopodia, *Rafinesq.* Sepia Octopus.
793. Tremectopus, *Chiaje*. Octopus, sp. *Férus*. Oct. velifer.
794. Eledone, *Leach*, 1817; *Risso*, 1826. Eledona, *Risso*, 1826.
Eledon, *Por. & Mich.* Heledone, *Menke*, 1830. Moschites,
Schneid. Sepia octopodia.
Ozaena, *Montf.* "Ozoema, *Rafin.*" Eledona Aldrovandi.
795. Octopodoteuthis, *Rüppell*, 1845. Verania, *Krohn*. O. —?
796. Cirroteuthis, *Eschricht*, 1836. Sciadephorus, *Eschr.* 1846.
Chiroteuthis, *D'Orb.* Cirrhoteuthis, *Moller*. C. Mulleri.

PHILONEXIANA.

797. Philonexis, *D'Orb.* 184 ? . Philonexus, *D'Orb.* Ph. Quoyianus.

Order II. DECAPODA.

Fam. II. SEPIADÆ.

SEPIOLINA.

798. Sepiola, *Leach*, 1817; *Risso*, 1826; *Blainv.* 1825. Loligo, sp.
Lamk. Sepia Sepiola.

SEPIANA.

799. Rossia, *Owen*, 1835. R. palpebrosa.
800. Sepia, *Linn.*; *Lam.* 1801; *Blainv.* 1825. S. officinalis.
Beloptera, *Desh.* B. parisiensis.

CRANCHINA.

801. Cranchia, *Leach*, 1817. Loligo β , *Blainv.* C. scabra.
Cranchia, *Peron.* C. cardioptera.

Fam. III. LOLIGIDÆ.

802. Loligo, *Leach*. Pteroteuthis, *Blainv.* 1825. Sepia Loligo.
803. Sepioteuthis, *Blainv.* 1825. Condrosepia, *Leach*. Sepia, sp.
Lam. 1812. Loligo, sp. *Blainv.* 1825. Loligo Sepioidea.

Fam. IV. LOLIGOPSIDÆ.

804. Lorigopsis, *Lam.* 1811; *Blainv.* 1825. Leachia, *Lesson*;
Blainv. 1825. Lol. —?
805. Histiotteuthis, *D'Orb.* Hist. —?

Fam. V. ONYCHOTEUTHIDÆ.

806. Onychoteuthis, *Licht.* 1818 ; *Blainv.* 1825. Onychia, *Lesueur*, 1821. Ony. *Bergii*.
 Onychia, sp. *Lesueur*, 1821. Cranchia, sp. *Férus.* 1823. Loligo, sp. *Peron.* Sepiola, sp. *Lesueur*, 1821. Sep. Cardioptera.
 807. Enoplateuthis, *D'Orb.* Ommastrephes, *D'Orb.* Les Calmar-flèches, *Blainv.* 1825. Loligo Sagittæ.
 808. Belemnites, *Lam.* 1801. Belemnita, *Flem.* 1828. Belemnosepia, *Agassiz*, &c. Belemnitella, *D'Orb.*
 808*. Belemniteuthis, *Pearce*, 1842.

Fam. VI. LITUIDÆ.

809. Lituus, *Brown*, 1756 ; *Humph. MSS.* 1797. Pedum, *Humph.* 1797 ; not *Lam.* Spirula, *Lam.* 1801. Spirulæa, *Peron.* Spirula a (not b & c), *Blainv.* 1825. Sp. australis.

Subclass II. TETRABRANCHIATA.

Order III. POLIPODA.

Fam. VII. NAUTILIDÆ.

810. Nautilus, *Lam.* 1801 ; *Montf.* N. Pompilius.
 Oceanus, *Montf.* 1808. Nautilus, sp. *Linn.* N. umbilicatus.

ERRATA.

- No. 126, for *Helenchus* read *Heleuchus*.
 No. 130, for *Helicena* read *Helicina*.
 No. 206, for *Forsar* read *Fossar*.
 ———, for *Pharianema* read *Phasianema*.
 No. 447, for *Amphibulima* read *Amphibulina*.
 No. 518, before *Lituus* add *Lituella*.
 No. 677, for *Strigella* read *Strigilla*.
 No. 691, add *Glabaris*.
 No. 706, for *Lunaria* read *Lunarca*.
 No. 708, for *Scapharea* read *Scapharca*.

INDEX OF GENERA OF MOLLUSCA.

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November 23, 1847.

William Yarrell, Esq., Vice-President, in the Chair.

The following papers were read :—

1. DESCRIPTIONS OF SOME NEW SPECIES OF AUSTRALIAN BIRDS.

By JOHN GOULD, Esq., F.R.S., F.Z.S. ETC.

MELITHREPTUS CHLOROPSIS.

Upper surface greenish olive; head and chin black; crescent-shaped mark at the occiput, and under surface, white; wings and tail brown, margined with greenish olive; apical half of the external webs of the primaries narrowly edged with white; irides dull red; bill blackish brown; naked space above the eye greenish white in some, in others pale wine-yellow; tarsi and outer part of the feet light greenish olive; inside of feet bright yellow.

Total length $5\frac{1}{4}$ inches; bill $\frac{11}{16}$; wing $3\frac{1}{4}$; tail $2\frac{5}{8}$; tarsi $\frac{3}{4}$.

Hab. Western Australia.

Remark.—Allied to *M. lunulatus*, from which it differs in being of a larger size, and in having the bare space over the eye pale green instead of red.

MELITHREPTUS ALBOGULARIS.

Upper surface greenish wax-yellow; head black; crescent-shaped mark at the occiput, chin, and all the under surface, white; wings and tail brown, margined with greenish wax-yellow; irides dull red; bill brownish black; legs and feet greenish grey, with a tinge of blue on the front of the tarsi.

Total length $4\frac{5}{8}$ inches; bill $\frac{5}{8}$; wing $2\frac{7}{8}$; tail $2\frac{1}{4}$; tarsi $\frac{11}{16}$.

Hab. Northern and Eastern Australia.

Remark.—Rather smaller than *M. lunulatus*, from which it differs in the brighter colouring of the back and in the total absence of any black on the chin.

GRUS AUSTRALASIANUS.

The general plumage deep silvery grey; the feathers of the back dark brownish grey, with silvery grey edges; lesser wing-coverts dark brown; primaries black; crown of the head and bill olive-green, the bill becoming lighter towards the tip; irides fine orange-yellow; raised fleshy papillæ surrounding the ears and the back of the head fine coral-red, passing into an orange tint above and below the eye, and becoming less brilliant on the sides of the face, which, together with the gular pouch, is covered with fine black hairs, so closely set on the latter as almost to conceal the red colouring of the skin; upper part of the pouch and the bare skin beneath the lower mandible olive-green; in old males the gular pouch is very pendulous, and forms a conspicuous appendage; legs and feet purplish black.

Total length 48 inches; bill $6\frac{1}{4}$; wing 24; tail $9\frac{1}{2}$; tarsi $10\frac{1}{2}$.

Hab. Australia generally.

Remark.—A very noble species, which has hitherto been confounded with the *Grus Antigone* of India, to which it is nearly allied, but from which it differs in being somewhat smaller in size and in the black colouring of the legs.

MYIAGRA CONCINNA.

The male has the whole of the upper surface, wings, tail, and breast, lead-colour, glossed with green on the head, neck and breast, and becoming gradually paler towards the extremity of the body and on the wings and tail; primaries slaty black; secondaries faintly margined with white; under surface of the wing, abdomen and under tail-coverts white; bill leaden blue, except at the extreme tip, which is black; irides brown; feet blackish grey.

The female has the head and back lead-colour, without the greenish gloss; wings and tail brown, fringed with bluish grey, particularly the secondaries; throat and breast rich rusty red; abdomen and under tail-coverts white, which colour does not gradually blend with the rusty red of the breast, as in the female of *Myiagra plumbea*; upper mandible black; under mandible pale blue, except at the tip, which is black.

Total length $5\frac{1}{4}$ inches; bill $\frac{1}{2}$; wing 3; tail $2\frac{3}{4}$; tarsi $\frac{5}{8}$.

Hab. North-western Australia.

Remark.—Closely allied to *M. plumbea* and *M. nitida*.

HERODIAS PLUMIFERUS.

The entire plumage pure white; bill and orbits yellow.

Total length 24 inches; bill 4; wing 11; tail $4\frac{1}{2}$; tarsi $4\frac{1}{4}$.

Hab. New South Wales.

Remark.—This species is distinguished by the greater developement of the plumes depending from the chest, and by their structure assimilating very closely to those of the back.

HERODIAS PANNOSUS.

The entire plumage bluish or slaty black, with the exception of the chin, which is pure white.

Total length 24 inches; bill $4\frac{1}{4}$; wing $10\frac{1}{2}$; tail 4; tarsi $4\frac{1}{4}$.

Hab. Port Stephens, New South Wales.

Remark.—The deep leaden blue colouring of this species renders it a very conspicuous bird.

ARDETTA STAGNATILIS.

Crown of the head, occipital crest and a small tuft beneath each eye black; neck and all the under surface grey, with a vinous tinge, which becomes much deeper on the abdomen and under tail-coverts; lengthened feathers of the back bluish grey, with lighter shafts; wing-coverts dark slate-grey, narrowly margined with buff and white; remainder of the wings and tail dark grey; irides light yellow; orbits and eyelash gamboge-yellow; upper mandible and cutting edge of the lower mandible very dark reddish brown; remainder of the lower

mandible oil-green; tibiæ and hinder part of the tarsi bright yellow; remainder of the legs and feet yellowish brown.

Total length 14 inches; bill $3\frac{1}{2}$; wing $7\frac{1}{2}$; tail $2\frac{3}{4}$; tarsi $2\frac{1}{4}$.

The young differ in having all the upper surface brown, with a triangular spot of white at the tip of all the wing-feathers, and the throat broadly and conspicuously striated with brown on a white ground.

Hab. Port Essington.

ACTITIS EMPUSA.

All the upper surface pale glossy or bronzy brown, each feather crossed with irregular bars of dark brown, bounded on either side by a narrow line of paler brown; wings dark brown; base and tips of the secondaries white; primaries very slightly tipped with white; central tail-feathers pale glossy or bronzy brown, with a row of irregular-shaped spots of dark brown along the margins; lateral feathers white, crossed by irregular blended bars of dark and pale brown; under surface white, with the exception of the sides of the chest, which are pale brown, and the shafts of the feathers of the front of the neck, which are also pale brown.

Total length $6\frac{1}{4}$ inches; bill $1\frac{1}{8}$; wing $4\frac{1}{8}$; tail $2\frac{1}{4}$; tarsi 1.

Hab. Port Essington.

Remark.—Closely allied to, but smaller than, *Actitis hypoleucos*.

STERNA GRACILIS.

Crown of the head and back of the neck rich deep black; all the upper surface, wings and tail silvery grey; sides of the neck and all the under surface white, with a blush of rose-colour on the breast and centre of the abdomen; shafts of the primaries white, their outer webs slaty black, and a narrow stripe of dark slate-colour along the inner web close to the stem; irides brownish red; bill red; feet orange-red, nails black.

Total length $12\frac{1}{2}$ inches; bill 2; wing $8\frac{1}{2}$; tail 6; tarsi $\frac{3}{4}$.

Hab. The Houtmann's Abrolhos, off the western coast of Australia.

Remark.—A very elegant species, closely allied to *Sterna Dougallii* of the British Islands.

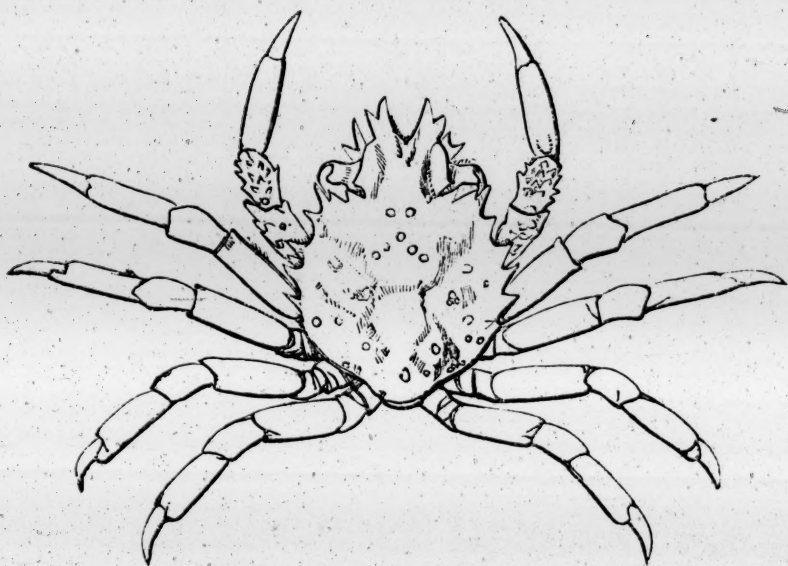
2. SHORT DESCRIPTIONS OF NEW OR LITTLE-KNOWN DECAPOD CRUSTACEA. By ADAM WHITE, F.L.S., ASSISTANT IN THE ZOOL. DEP. BRITISH MUSEUM.

Family MAIADÆ.

SCHIZOPHRYS, White.

Carapace oval, depressed, somewhat attenuated behind; beak deeply cloven; upper orbit deeply cloven, with a strong tooth in the middle of the cleft; under orbit with an elongated appendage on the inside, with two teeth at the end.

Tail of male with seven joints, the sides nearly parallel. Fore-legs shortest. Fingers without teeth.



Schizophrys serratus (twice the natural size).

SCHIZOPHRYS SERRATUS, White, List of Specimens of Crustacea in the Collection of the British Museum, p. 9.

Two basal joints of fore-legs with numerous pointed tubercles; sides of carapace with six strongish teeth, including outer tooth of orbit. The two strong teeth of the front with a tooth each on the outside.

Hab. Isle of France (male). Coll. Brit. Museum.

SCHIZOPHRYS SPINIGER, White, l. c. 9.

Basal joints of fore-legs smooth; sides of carapace with eight teeth on each, the second and third from the orbit united at the base; behind, in the middle and close to each other, are two small teeth. Carapace above with numerous minute tubercles, amongst which are nineteen of larger size, arranged mostly transversely. The carapace is yellow, tinged here and there.

Hab. Philippine Islands (Siquejor and Isle of Rohol). Coll. Brit. Museum. From Mr. Cuming's collection.

HUENIA FRONTALIS, White, l. c. 10.

Carapace with the front very wide and semicircular in front; sides of carapace behind eyes narrower than a line measured across; a slight sinus in the side behind. Legs flat and foliaceous.

Locality unknown. Coll. Brit. Museum.

HUENIA DEHAANII, White, l. c. 10.

Carapace elongated, depressed; beak compressed; sides hairy, with a tooth at base directed forwards; carapace behind eyes with the sides nearly parallel, the end straight; sides with two wide, bluntish, somewhat falcated appendages directed backwards, separated by a roundish sinuation.

Hab. Philippine Islands. Coll. Brit. Museum. From Mr. Cuming's collection.

MENETHIUS PORCELLUS, White, l. c.

Upper part of carapace very irregular all over; the front, with three teeth arising from the same, plain; the middle one very much elongated and bent down at the end; the side margin with several largish crenations; base of fore-legs with two or three tubercles on the outside.

Blastia monoceros, Leach MSS.

Hab. Isle of France (male and female).

Family CANCERIDÆ.

Genus ACTÆA, De Haan.

ACTÆA NODULOSA, White, l. c. 15.

Carapace and legs above thickly covered with rounded tubercles, largest on fore-legs and on fore-margins; a tubercle on the under orbit; the carapace in the middle longitudinally impressed; the posterior edge is straight and furnished with two transverse lines of small tubercles; claws, both upper and under, with longitudinal keels, horn-coloured.

Hab. Isle of France. Coll. Brit. Museum.

ACTÆA CARCHARIAS, White, l. c. 15.

Carapace and legs above covered very closely with sharp rough tubercles; on the front the tubercles are much smaller, the upper surface divided into different divisions by transverse and longitudinal lines; upper edge of legs serrated.

Hab. Australia (Swan River).

This species is nearly allied to *Actæa calculosa* (*Cancer calculosus*, Edw. Crust. i. 378).

ATERGATIS, De Haan.

ATERGATIS SINUATIFRONS, White, l. c. 14.

Carapace with the marginal limb very entire and rather thick, of a uniform brownish red. Front with three lobes, each notched in the middle. Fingers of fore-legs with tufts of hair, black, extreme tip white. Width of carapace four inches.

Hab. Mauritius. Coll. British Museum. Presented by Lady Frances Cole.

ATERGATIS SUBDIVISUS, White, l. c. 14.

Carapace with the marginal limb divided by four very indistinct lobes; greater part of top of carapace deep red, with yellowish spots; behind paler. Fingers black, base of moveable finger yellow. Front of carapace with two straightish lobes, sinuated close to the eye. Width of carapace three inches eight lines.

Hab. Philippine Islands. From Mr. Cuming's collection.

Near *A. marginatus*.

ATERGATIS ASPERIMANUS, White, l. c. 14.

Carapace with its latero-anterior sides with a cutting edge, part of carapace behind this punctate; the rest of upper surface almost quite

smooth, with three or four impressed lines in front. Hands rugose, especially above; fingers both moveable and fixed, deeply channeled. Pale yellowish red; feet darker; fingers of fore-legs pale horn-coloured.

Hab. Philippine Islands. Coll. Brit. Museum. From Mr. Cuming's collection.

ATERGATIS LATERALIS, White, l. c. 15.

Carapace with each of the sides having three projecting teeth; hands with a crest above and below; fingers short, pale brown; hands roughish on the outside.

Hab. Unknown. In collection of Brit. Museum.

XANTHO, Auct.

XANTHO DEPRESSUS, White, l. c. p. 17.

Carapace much-depressed, very flat, in front tuberculated; many of the tubercles sharp-pointed. Front deeply notched in the middle; sides with three teeth. Hands on the outside tuberculated, three last joints of legs slightly tuberculated and with a few hairs.

Hab. Philippine Islands (Isle of Corregidor). From Mr. Cuming's collection.

This is quite a magazine genus in the family *Canceridae*; it requires subdivision greatly.

XANTHO DENTICULATUS, White, l. c.

Carapace with the latero-anterior edge long, and arched with eight sharp teeth on each side, largest behind. Front of carapace between the orbits separated into four parts by five longitudinal lines; two transverse lines about the middle. Hands on the outside smooth, above with a bluntish edge, punctured on each side.

Hab. West Indies. Brit. Museum. From Mr. Scrivener's collection.

XANTHO CULTRIMANUS, White, l. c. 17.

Carapace slightly convex above; front notched; sides with four teeth; front part and sides with very slight tubercles; carapace behind the eyes with impressed lines, which meet in the middle. Hands with four longitudinal impressed lines on the outside, which is covered with small roughish tubercles. Carapace and legs pale yellowish, varied with red.

Hab. Philippine Islands. Coll. Brit. Museum. Mr. Cuming's collection.

XANTHO LAMELLIGERA, White, l. c. 17.

Carapace rather convex above, with four teeth on each side; upper part on sides slightly tubercular. Hands rough on the outside; edge of wrist above with a toothed margin; edge of hands, both above and below, with a lamellar edge. Hind-legs on the upper edge lamellar.

Hab. Isle of France. Coll. Brit. Museum.

CHLORODIUS, Auct.

CHLORODIUS HIRTIPES, White, l. c. 18.

Carapace smooth; front very broad, scarcely notched in the middle; the sides with four blunt teeth. Fore-legs long; third joint very thick; upper edge at base with one thick tooth; hind-legs with many brownish hairs.

Hab. Philippine Islands. Coll. Brit. Museum. From Mr. Cuming's collection.

CHLORODIUS FRAGIFER, White, l. c. 18.

Carapace covered with roundish berry-like tubercles, arranged in groups and separated by definite impressed lines. Pedicel of eye with two spines close to the eye; legs covered with rice-like tubercles. White, a broad pinkish longitudinal line down the middle in front; five pink marks on hind part of carapace.

Hab. Philippine Islands (Rohol). Coll. Brit. Museum. From Mr. Cuming's collection.

CHLORODIUS PILUMNOIDES, White, l. c. 18.

Carapace and legs covered with brown hairs; carapace somewhat depressed, sides with three teeth covered with spines; fore-part of carapace with several bosses, and rough with spiny tubercles; on hind-part of carapace are four transverse raised lines, the innermost the shortest. Hands large, upper edge serrated, outside and top with largish tubercles. Fingers on the outside and top channeled; several tubercles at the base of the moveable finger; fingers black, hollowed ends white. Hind-legs serrated above, second and third joints with three rows of serratures.

Hab. Singapore. Philippine Islands (Rohol). Coll. Brit. Museum. From Mr. Cuming's collection.

PANOPEUS, Edwards.

PANOPEUS DENTATUS, White, l. c. 18.

Carapace having the sides furnished with five lobes, the first three blunt and wide, the last two sharp and narrow; front with four lobes, the two middle largest; fore-part of carapace above, round the edge, depressed and irregularly tuberculated, most of the tubercles very small. Hands very unequal in size, the right largest fingers thick, the left small, the fingers much elongated. Upper part red, with many irregular yellow marks.

Hab. Philippine Islands (Masbata). Coll. Brit. Museum. From Mr. Cuming's collection.

OZIUS, Edwards.

OZIUS? SUBVERRUCOSUS, White, l. c. 19.

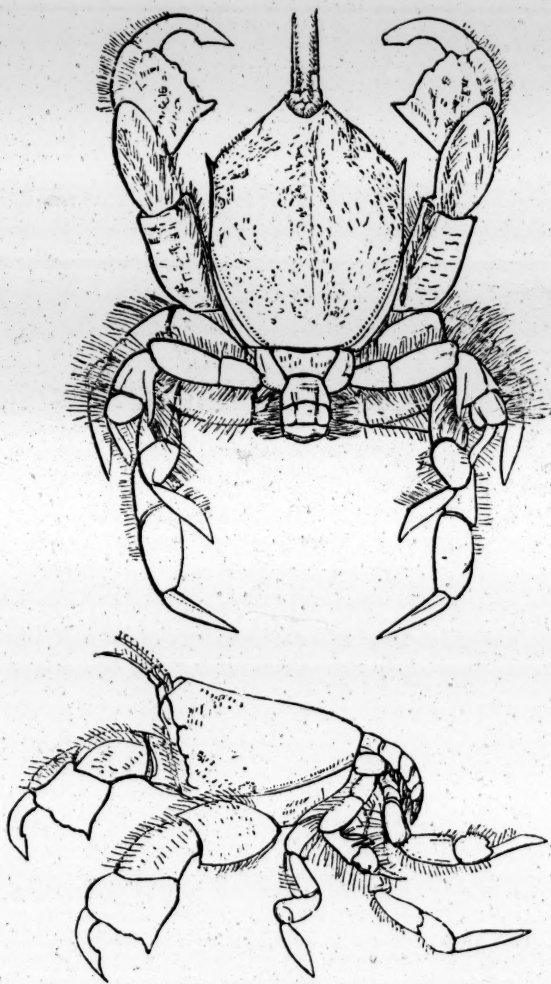
Carapace with latero-anterior side short, with three deep incisions forming four lobes, the two middle truncated; carapace above irregular, the edges and under-side thickly covered with small warts. Front formed of two truncated widish lobes, separated by a very

slight notch; a deepish notch between the front and the orbit, and a sinus between the outer orbital angle and the first lobe of the side.

Hab. — ?

Family HIPPIDÆ.

COSMONOTUS, Adams and White.



COSMONOTUS GRAYII, Adams and White, List of Crustacea, p. 129.

Carapace oval (about an inch in length and half an inch wide), very much compressed laterally, especially in front, with a distinct prominent keel extending down the middle line, very strongly marked in front, but fainter posteriorly; the surface covered with numerous minute depressed punctures.

Front with two very small spines on each side of a deep angular notch, in which are placed the eyes.

Chelæ trigonal, the inferior part plane, the exterior convex, with transverse, interrupted, engraved or depressed lines, the upper angle covered with long thick hairs; the inner surface concave. Carpus

incurved, subcompressed, convex externally, but less convex internally, and ending above and in front in a blunt spine; hand compressed, elevated, with the upper edge arched, but not so sharp as in *Notopus*; the sides convex and covered with asperities or minutely denticulated ridges, interrupted and transverse; finger uncinatè, very short, incurved; thumb narrow, compressed, elongated, with a sharp apex and a strong tooth near the distal extremity.

Feet short and weak, as in *Notopus*; the first tibia bicarinated; the tarsus subquadrate, anteriorly bicarinate, with a scalpel-shaped claw; the second tibia one-keeled, with the tarsus oblong, and a sharp elongated trigonal claw; the third tibia subtriangular; tarsus short, flattened, subtrigonal, with a falcate claw; fifth tibia triangular, very short, flattened; tarsus transverse-ovate, with a small narrow claw.

Abdomen of the male seven-jointed, the joints from the first to the sixth nearly of the same width as in *Notopus*, and the last joint trigonal.

Cosmonotus differs from *Notopus*, De Haan, by wanting the post-frontal, elevated, denticulated ridge; by the dorsal keel ending abruptly in front, instead of terminating in a central frontal spine; in the front being notched with a single small spine on each side; in the thorax being much compressed, more especially in front, and in the produced and angular shape, while in *Notopus* it is almost straight across in front; and in the sides being entire, with a short sharp spine at the antero-latero angle.

The cut represents this species of twice the natural size, and is named in compliment to J. E. Gray, Esq., F.R.S., Keeper of the Zoological Department in the British Museum.

December 12, 1847.

W. Spence, Esq., F.R.S., in the Chair.

The following papers were read:—

1. DESCRIPTIONS OF NINETEEN NEW SPECIES OF HELICEA, FROM THE COLLECTION OF H. CUMING, ESQ. BY DR. L. PFEIFFER.

1. *HELIX KURRI*, Pfr. *Hel. testâ mediocriter umbilicatâ, depressâ, tenui, punctis distantibus sub lente scabriusculâ, diaphanâ, corneo-albidâ, fasciâ 1 angustâ rufâ, alterâ obsoletâ infra peripheriam ornâtâ; spirâ planâ; anfractibus 4 $\frac{1}{3}$, primis convexiusculis, ultimo sensim descendente, utrinque subplano, anticè subconstricto; aperturâ obliquâ, subtriangulâri-lunari; peristomate simplice, tenui, marginibus conniventibus, supero latè expanso, basali reflexo, columellari brevî, triangulatim dilatato.*

Diam. 25, alt. 10 mill.

Locality unknown.

2. *HELIX GARDENERI*, Pfr. *Hel. testâ subperforatâ, turbinatâ, solidâ, striis longitudinalibus et spiralibus distantioribus decussatâ, nitidâ, castaneâ; spirâ elevatâ, acutiusculâ; anfractibus 6½ convexiusculis, ultimo majore, sublavigato, ad peripheriam cingulo albo ornato; aperturâ obliquè lunari, intus albâ; peristomate simplice, recto, margine columellari subincrassato, supernè subdilato, perforationem ferè claudente.*

Diam. 22, alt. 15 mill.

Found on leaves of trees in the forests of Ceylon, 8000 feet above the level of the sea (Dr. Gardener).

3. *STREPTAXIS FUNCKI*, Pfr. *Str. testâ subobtectè umbilicatâ, depresso-ovatâ, tenuiusculâ, supernè confertim plicatâ, basi lævigatâ, sub epidermide tenui, corneo-albidâ; spirâ regulariter parùm elatâ, apice obtusiusculâ; anfractibus 6½ vix convexiusculis, ultimo deorsum deviante, prope suturam striatulo, basi convexo, juxta umbilicum mediocrem compresso; aperturâ obliquâ, subtriangulâri; peristomate breviter expanso, margine basali leviter arcuato, columellari in laminam triangularem, fornicatim supra umbilicum reflexam, dilatato.*

Diam. 27½, alt. 16 mill.

From Merida, New Granada (Funck).

4. *BULIMUS QUADRICOLOR*, Pfr. *Bul. testâ imperforatâ, succinei-formi, tenui, striatâ, luteâ, strigis obliquis fulguratis confertis castaneis, nonnullisque latioribus stramineis, antrorsum serratis, infra medium evanescentibus pictâ; spirâ conicâ, obtusiusculâ; anfractibus 4 subplanis, ultimo parùm convexo, 2—3 longitudinis subæquante; columellâ filari; peristomate undique brevissimè expanso, roseo, marginibus callo tenuissimo junctis.*

Long. 30½, diam. 14 mill.

From Chachopo, province of Merida, New Granada (Funck).

5. *BULIMUS LOVÉNI*, Pfr. *Bul. testâ imperforatâ, ovatâ, tenui, longitudinaliter plicatâ, fusco-luteâ, strigis castaneis fulguratis elegantissimè pictâ; spirâ conicâ, obtusâ, apice subimpressâ; anfractibus 4½ vix convexiusculis, supremis castaneis, penultimo interplicis subtilissimè transversim striato, ultimo subtiliter malleato, 4—7 longitudinis æquante; columellâ castaneâ, supernè leviter plicatâ; aperturâ oblongo-ovali, subconcolore; peristomate nigro-castaneo, undique expanso et reflexo, margine columellari supernè dilatato, appresso.*

Long. 42, diam. 20 mill.

From the Colonia of Tovar, Venezuela (Mr. D. Dyson).

6. *BULIMUS LAMARCKIANUS*, Pfr. *Bul. testâ subperforatâ, ovatâ, solidâ, striatâ et undique distinctè granulatâ, saturatè fuscâ, punctis nigricantibus conspersâ; spirâ brevi, obtusiusculâ; anfractibus 5 parùm convexis, ultimo ventrosiore, 3—5 longitudinis sub-*

æquante; columellâ obliquè leviter plicatâ; aperturâ oblongo-ovali, intus lividâ; peristomate subincrassato, expanso-reflexo, marginibus callo tenui junctis, columellari supernè dilatato, perforationem ferè occultante.

Long. 62, diam. 32 mill.

From the Andes of New Granada, 8000 feet high (Funck).

7. *BULIMUS BLAINVILLEANUS*, Pfr. *Bul. testâ subperforatâ, solidâ, ventroso-ovatâ, longitudinaliter confertim plicatâ, sub epidermide olivaced castaned, strigis sparsis nigricantibus fulguratis variegatâ; spirâ brevi, conicâ, acutiusculâ; anfractibus $4\frac{1}{2}$, supremis planis, penultimo convexiusculo, ultimo ventroso, 3—5 longitudinis subæquante, perobliquè descendente; columellâ mediocriter plicatâ, paulò recedente; aperturâ oblongo-semiovali, intus nigricante, nitidâ; peristomate nigro, incrassato, latè expanso, marginibus callo tenuissimo junctis, columellari dilatato, plano, subappresso.*

Long. 50, diam. 25 mill.

From Zaji, province of Merida, New Granada (Funck).

8. *BULIMUS PLECTOSTYLUS*, Pfr. *Bul. testâ subperforatâ, ovato-conicâ, solidâ, regulariter et distinctè granulatâ, saturatè castaned, flammis brevibus albis infra suturam ornatâ; spirâ conicâ, obtusiusculâ; anfractibus 5 vix convexiusculis, superioribus plicato-striatis, ultimo tumido, anticè perobliquè descendente, 4—7 longitudinis subæquante; columellâ supernè plicâ validâ, subobliquâ, munitâ; aperturâ obversè auriformi, intus sordidè lilaced, nitidâ; peristomate undique expanso et reflexo, livido-fusco.*

Long. 35, diam. 17 mill.

From Chachopo, province of Merida, New Granada (Funck).

9. *BULIMUS VERANYI*, Pfr. *Bul. testâ subperforatâ, ovatâ, solidiusculâ, minutissimè granulatâ, fulvâ, punctis castaneis conspersâ et strigis luteis vel albis fulguratis distantibus ornatâ; spirâ conicâ, obtusiusculâ; anfractibus $4\frac{1}{2}$ convexiusculis, ultimo 3—5 longitudinis æquante; columellâ supernè subplicatâ, leviter arcuatâ; aperturâ oblongo-ovali, intus margaritaced; peristomate albo, undique mediocriter expanso.*

Long. 33, diam. 15 mill.

From Chachopo, province of Merida, New Granada (Funck).

10. *BULIMUS PERDIX*, Pfr. *Bul. testâ perforatâ, ovato-oblongâ, solidâ, confertim striatâ, albidâ, flammis, maculis et punctis nigricantibus pictâ; spirâ conicâ, apice obtusiusculâ; suturâ marginatâ; anfractibus $5\frac{1}{2}$ vix convexis, ultimo spiram subæquante, basi juxta perforationem angustam vix compresso; columellâ supernè obliquè plicatâ, leviter arcuatâ; aperturâ oblongâ, intus concolore; peristomate undique expanso, margine columellari subfornicato.*

Long. 36, diam. 15 mill.

From Agua de Obispo, New Granada (Funck).

11. *BULIMUS QUITENSIS*, Pfr. *Bul. testâ umbilicatâ, ovato-conicâ, solidâ, ruguloso-striatâ, pallidè fusciscente, strigis variis fuscis*

et castaneis variegatâ; spirâ conicâ, acutâ; anfractibus 7 planiusculis, ultimo convexo, spiram vix superante, basi juxta umbilicum angustum, apertum compresso, nigricante; columellâ rectâ, verticali, nigricante; aperturâ oblongâ, ad basin columellæ subangulatâ, intus nigricanti-limbâtâ; peristomate simplice, recto, marginibus subparallelis, dextro supernè repando, columellari dilatato, patente.

Long. 26, diam. 12 mill.

From Quito (De Lattre).

12. *BULIMUS IRREGULARIS*, Pfr. *Bul. testâ umbilicatâ, ovato-oblongâ, solidulâ, plicis confertis, longitudinalibus rugosâ, carnea, fusculo substrigatim variegatâ; spirâ conicâ, acutiusculâ, apice rufâ; anfractibus 6 vix convexiusculis, ultimo spirâ vix brevior, circa umbilicum angustum, non pervium subangulato-compresso; columellâ leviter arcuatâ; aperturâ ellipticâ, basi subangulatâ; peristomate simplice, recto, margine columellari e basi reflexo, supernè dilatato.*

Long. 19, diam. 9 mill.

From Quito, Equador (De Lattre).

13. *BULIMUS MERIDIONALIS*, Pfr. *Bul. testâ perforatâ, ovato-conicâ, striatâ, diaphanâ, albâ, fasciâ 1 aurantio-fuscâ cingulatâ; spirâ regulariter conicâ, acutiusculâ; anfractibus 7 convexiusculis, ultimo spirâ brevior, subrotundato; columellâ leviter arcuatâ; aperturâ obliquâ, truncato-ovali, intus concolore; peristomate simplice, breviter expanso, margine columellari supernè fornicato-reflexo.*

Long. 15, diam. 8 mill.

From South Africa.

14. *BULIMUS PELLUCIDUS*, Pfr. *Bul. testâ subperforatâ, turritâ, tenuissimâ, striatâ, nitidâ, pellucidâ, lutescenti-cornâ; spirâ elongatâ, apice obtusâ; anfractibus 7 convexiusculis, ultimo 1—3 longitudinis æquante; columellâ subtortâ; aperturâ subquadrangulari-ovali; peristomate simplice, acuto, margine columellari breviter revoluta.*

Long. $11\frac{1}{2}$, diam. 4 mill. (spec. max.).

From Merida, New Granada (Funck).

15. *BULIMUS GRANADENSIS*, Pfr. *Bul. testâ angustè perforatâ, fusi-formi-ovatâ, tenui, irregulariter striatâ, albâ, strigis vitellinis et maculis longitudinalibus nigricantibus seriatis ornatâ; spirâ conicâ, acutiusculâ; anfractibus 6 vix convexiusculis, ultimo spiram æquante; columellâ rectâ; aperturâ ovali-oblongâ, intus concolore; peristomate acuto, simplice, vix expansiusculo, margine columellari in laminam triangularem tenuem reflexo, perforationem ferè occultante.*

Long. 26, diam. 11 mill.

From Merida, New Granada (Funck).

16. *ACHATINELLA MIGHELSIANA*, Pfr. *Ach. testâ ovato-coniformi, lavigatâ, opacâ, nitidâ, nived, strigis cinereis variegatâ; spirâ*

conicâ, apice acutiusculâ; suturâ submarginatâ; anfractibus $5\frac{1}{2}$ convexis, ultimo infra medium lined nigricante (interdum duplicatâ) cincto; plicâ columellari validâ, dentiformi, basi castaneâ; aperturâ semiovali, fusco-marginatâ; peristomate simplice, acuto.

Long. 17, diam. 8 mill.

From Molokai, Sandwich Islands.

17. *ACHATINA MAGNIFICA*, Pfr. *Ach. testâ ovato-subfusiformi, tenuiusculâ, leviter striatulâ, haud nitente, luted, strigis et flammis virentibus et castaneis, fasciâque 1 luteo et castaneo articulatâ, supræmediâ variegatâ; spirâ conicâ, apice obtusissimâ; anfractibus $5\frac{1}{2}$ vix convexiusculis, ultimo spiram paulò superante; suturâ angustè marginatâ; columellâ rectâ, verticali, callo introrsum albo, extrorsum nigricante indutâ, basi rubrâ, ad basin aperturæ ellipticæ, intus cærulescenti-albidæ obliquè truncatâ.*

Long. 47, diam. 21 mill.

From Quito, Equador; in woods (De Lattre).

18. *ACHATINA FUNCKI*, Pfr. *Ach. testâ subperforatâ, ovato-conicâ, tenui, striatulâ, nitidâ, pellucidâ, stramineo-hyalinâ; spirâ conicâ, acutâ; anfractibus 6 convexis, ultimo spirâ paulò breviorè; aperturâ semiovali; pariete aperturali medio plicâ lævi, intrante munito; columellâ medio lamellatim truncatâ; peristomate simplice, acuto.*

Long. $12\frac{1}{2}$, diam. 6 mill.

From the province of Merida, New Granada (Funck).

19. *BALEA FUNCKI*, Pfr. *Bal. testâ sinistrorsâ, vix subrimatâ, turratâ, truncatâ, sublævigatâ, fuscâ; anfractibus (spec. trunc.) 5 convexiusculis, ultimo basi rotundato; aperturâ oblongo-semiovali, intus fulvâ; plicâ parietali validâ, compressâ, columellari obliquâ, obsoletâ; peristomate albo, expanso, reflexiusculo, marginibus callo junctis, externo sinuato.*

Long. (spec. trunc.) 14, diam. 4 mill.

From Chachopo, province of Merida, New Granada (Funck).

2. DESCRIPTION OF A NEW SPECIES OF VOLUTE. BY W. J. BRODERIP, Esq., F.R.S. ETC.

VOLUTA SIGNIFER. *Vol. testâ ovato-fusiformi, longitudinaliter creberrimè lineatâ, subflavâ, signis spadiceo-brunneis irregularibus, interruptis vittatâ; spirâ mediocri, subtumidâ, apice subacuto-mammillari, glabro; anfractibus 3, ultimo longè maximo, subventricosò; labro acuto; columellâ quadriplicatâ, plicis magnis.*

Long. $3\frac{5}{8}$, lat. $1\frac{5}{8}$ poll.

Hab. In Oceano Orientali?

Two bands of detached, reddish-brown, irregular, interrupted spots wreath the spiral whorls, and three such bands, with a trace of a fourth, adorn the body-whorl. There is a wide interval between the upper two of the bands of the body-whorl, and the third and trace of the fourth on the same whorl. An irregular linear dash of the same colour connects the three uppermost of these bands longitu-

dinally and centrally. Indeed the colour seems disposed generally to run from the upper to the lower band of each pair. The terminal notch is very deep and is surmounted by an unusually strong elevated ridge.

The specimen is faded and rubbed, but in form is nearly perfect. When in fine condition *V. signifer* must be one of the most elegant of the beautiful family to which it belongs.

Mr. Cuming obtained this Volute in the present year, from the cabinet of Dr. Dalen of Rotterdam, by whom it was liberally presented to him, although Dr. Dalen had no other example of the shell. I never saw the species before, and as far as my experience goes, this is the only specimen known.

INDEX.

The names of New Species, and of Species newly characterized, are printed in Roman Characters: those of Species previously known, in *Italics*: those of Species respecting which Anatomical Observations are made, in CAPITALS.

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